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ARTHRITIS DEFORMANS.[1]

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I HAVE been asked to render you tonight a short paper on *arthritis deformans*. Such short notice was given me and so little time to devote to it has been at my disposal, that I must crave your indulgence for its shortcomings.

It is not proposed in this paper to discuss the various views put forward by well known men, but to confine it in the main to the consideration of some of the primary causes. Neither do I propose encroaching on Dr. John Hoets as regards treatment.

Arthritis deformans, rheumatoid arthritis, osteo-arthritis, chronic villous arthritis, rheumatic, chronic articular rheumatism are all terms which come under the main classification of non-specific infective arthritis. Typical cases of the above differ in their morbid appearances, but great similarities are present in all; a case belonging in its early stage to one may later develope into one of another type.

The condition is commoner in white than coloured races. Sex is regarded as a predisposing factor—the incidence in females being four times that in males. There is undoubtedly an inherited susceptibility in individuals for joints and fibrous tissues to be infected in the presence of an exciting infective cause. All ages are susceptible, but its occurrence is rare under ten years of age. Providing that an infective focus is present, mental straining and debility (by lowering general resistance), pregnancy, parturition, prolonged lactation, exposure to damp and cold, trauma and physical strain act as predisposing causes. It is now accepted that the vast majority of cases are of streptococcal origin; undoubtedly other organisms, such as those of the coli group, are occasionally associated. Focal infection is protean in its manifestation, no portion of the human structure escaping. Infection has to be sought for with the utmost care. Time and time again does it elude observation. So important is it in these cases that I invariably review individuals several times for foci which may be missed in spite of most careful search. The common seats of in-

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on October 28, 1926.

fective foci are the nose with its sinuses, teeth, tonsils, discharging ears, gall bladder, appendix, prostate, uterus and cervix and secondary intestinal infection following oral sepsis. The commonest site is in the teeth; teeth may reveal either open or closed sepsis. Sepsis is open in gingival infections and pyorrhœa in all its stages; here the discharge in the main is into the mouth. It is not sufficiently realized that drainage from many of the deep pockets is directly into the tissues. If one has to visualize the extent of the absorbing surface in several sockets affected with pyorrhœa one realizes that it is measured in square inches. Closed sepsis is located at the apices. It is always found associated with devitalized teeth. The only means of demonstration is X ray examination. Every dead tooth must be suspected. At the same time the limitations of X rays must be realized.

(i.) The effects of infection may or may not be revealed.

(ii.) The extent of absorption does not express the extent of infection, except in part as the individual's reaction to the infection is understood.

(iii.) Areas of infection, apical or lateral, may not be disclosed because of any of the following conditions: (*a*) being hidden by a part of that tooth, such as another root, (*b*) mass of bone as the molar, (*c*) a layer of condensing osteitis obscuring the area of rarefying osteitis.

X rays underestimate the size of lesions. Very many times have I compared the radiograph with the tooth after extraction with astonishment at the enormous discrepancy shown.

Apical sepsis is revealed by what is known as a granuloma. The popular idea is that it is a pus sac. This is not so, although it may become so. The name is a misnomer. It is a defensive membrane, highly vascular with a definite epithelial membrane in contact with the root apex.

A normally functioning periapical quarantine tissue is Nature's mechanism for protection of the individual by destroying the organisms and toxins immediately at their source, thereby preventing the tissues of the individual's body from exposure to either of these agencies.

An apparently given quantity of pulpal irritant may produce a large variation in periapical structural change. It is found that individuals with a high defence against injury from their dental infections expressing themselves systemically as rheumatic group lesions, have invariably a relatively larger zone of rarefaction or bone destruction about the apex of a tooth than do those individuals without that defence in whom dental infections express themselves readily as rheumatic group lesions.

Individuals with a zone of condensing osteitis surrounding the zone of rarefaction are generally those whose defence, previously high, has been reduced; they are in a state of acquired susceptibility. This acquired susceptibility can be brought about by some "overload" such as influenza, worry *et cetera*.

The radiographs which I am showing, illustrate nearly all varieties of dental injuries and conditions; some are cysts of enormous size. Most interesting is the cystic area illustrated in the angle of the lower jaw with a small fragment of tooth remaining; this illustrates the necessity for having vacant spaces in this jaw examined by X rays. This condition obtains at times when the granuloma after tooth extraction is left behind in the tooth socket. I fear that all our dental colleagues do not curette after extracting. I have been fortunate enough to find this condition a few times.

A further skiagram illustrates a case of sepsis at the apex of one root of the first molar with quiet penetration of the antral floor giving rise to a "quiet antrum." This antrum was filled with polypi, giving no active local trouble to the patient. This "quiet" antrum is liable to be overlooked time after time.

A further skiagram illustrates very well how apical sepsis can be missed. The first film would appear to be normal to any but the experienced eye. Taken from a different angle the process is very apparent. Then there are films of a whole mouth showing a very considerable number of types of infective processes. Lastly there is a film showing pyorrhœa with considerable retraction and alveolar absorption. I also show exhibits of granulomatous conditions about several teeth. There is one infection I have not noticed in my paper which is well worth recording.

Some five or six years ago I was asked to see a woman confined to her bed with acute pain in the region of one hip joint. She gave a history of rheumatic pains in her joints for twelve years, deformity of multiple joints was extensive and was attended with much pain and crippling. On investigation a chronic discharging frontal sinus was found. She gave a history of acute trouble fourteen years previously, that is, two years before her "rheumatism" commenced. Active measures to obtain free drainage were taken and relief was obtained within thirty-six hours; the organism found was Friedländer's bacillus. The result in this case from constant attention to drainage of the sinus and use of a vaccine was astonishing. Pain disappeared, involved joints became more flexible and she was able to dress herself with ease.

I would like to draw your attention to a patient who has been under my notice for a considerable time.

A woman, aged thirty years, suffering severely from *arthritis deformans*, one knee ankylosed, the other very enlarged, feet, hands, wrists and temporo-maxillary joints involved, was found to have as her focus a chronic endometritis of many years' standing. As these patients do no good at all with curetting *et cetera*, I decided to try the result of draininge of uterus by glycerine. This type of treatment is now quite largely carried out in London for septic infections of the uterine cavity. Daily for a period of about three weeks, the uterus had about four cubic centimetres (one fluid drachm) of glycerine injected from a syringe and special catheter. The patient at first came to my rooms with great effort and pain. After fourteen days the improvement was most pronounced. The pain decreased and she was able to journey to Macquarie Street in comparative comfort; she was able to walk from the station to her home, a considerable distance, and she had not done this for some years. So great was the improvement and sure did I feel that the cause was found that hysterectomy was suggested. The patient, however, refused this and the glycerine treatment being discontinued she

relapsed. I am showing the necessary instruments used in this treatment.

I am not going to weary you with other causes, but have put forward this investigation from the point of view of teeth, because so few medical men have taken the trouble to investigate these points for themselves. Time and time again are grave errors made in reading results. A dental skiagram is not in so many cases one which can be read with a cursory glance. Correct interpretation is of the greatest importance; in fact it is in so many cases the main link in the chain of evidence.

Dental X ray machines have sprung up like mushrooms, are being worked skilfully by some and unskilfully by others and a great amount of poor work from actual want of knowledge of technique is being done.

Medical men refer their patients to a dental colleague who reports all well: "I have rayed the mouth and found nothing." I would beg of you to ask for the films, examine them yourselves, do not be put off with the assertion that all is well or in many cases your patient will suffer and you will miss a very important piece of evidence in summing up.

THE TREATMENT OF ARTHRITIS DEFORMANS.[1]

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ON the subject of *arthritis deformans* I will preface my remarks by admitting that I have no original ideas on treatment to offer. I am rather to present to you for consideration some aspects of the subject from the point of view of the orthopædist. These must of necessity deal rather with complications and sequelæ than with the active process producing the rather complicated pathological picture to which we give the name *arthritis deformans*.

That this point of view needs emphasizing must be apparent to anyone whose fortune or misfortune it is to meet many of the sufferers from this terrible affliction, particularly amongst the poorer classes of the community in the out-patient department. Here it is that one sees the neglected patients from the orthopædic point of view. Most of them have had abundance of treatment aimed at the general condition. I refer to the deformities which have been allowed gradually to develope and to become fixed through inattention to the condition of joints and position of limbs, whilst the general condition has been attacked and vigorously treated often over long periods.

Before speaking of the purely surgical aspects of the problem I should like to generalize briefly: The management of a case of *arthritis deformans* must be along two lines from the start: (i.) treatment of the general condition and (ii.) treatment of the local condition. This dual attack is of fundamental importance.

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on October 28, 1926.

Treatment of the General Condition.

In all pathological states the aim of treatment is to remove the cause. In *arthritis deformans* we are up against our first and often greatest difficulty in discovering the cause before we can set about removing it. In spite of the many theories as to the ætiology I personally think that infection is the origin in the very great majority of cases, if not in all.

Infection may be present without causing *arthritis deformans*, that is obvious, but whether *arthritis deformans* can occur without infection seems to be difficult indeed to demonstrate.

Joints in general may be said to be not highly resistant either to attack by pathogenic organisms or their toxins and the comparatively low resistance is particularly prone to be still further lowered by trauma to which all joints are of their very nature exposed.

The first step in the treatment then is to hunt for the focus of infection. It may be not active at the time the patient comes for treatment. The history is of help often, as for instance an involvement of several joints about the same time years before, following some illness or septic process with no further involvement since is strong presumptive evidence that the original cause is removed and that the joint, if capable of improvement, will maintain it. I will not dilate on this phase except to remark that team work here will be of immense value to the patient. The physician, pathologist, physiological chemist, aurist, radiographer *et cetera* will all play important parts in the search for and elimination of the cause of the disorder.

It is disappointing to find the progress of the disease unchecked when one or more foci have been uncovered and cleared up. It means that although undoubtedly the patient has been benefited by thus ridding him of undesirable guests, he is still the host of the organism causing his arthritis and the search must be continued.

I would like to mention a point in this connexion which I have not infrequently noted. The teeth are as a rule the first to come under suspicion and after X ray examination all those which are obviously not healthy are removed. I have been struck with the fact that so often no improvement follows this sacrifice until the one or two which were regarded as only slightly suspicious, have been also removed Then at times the improvement is dramatic. This seems to me reasonable. Surely the tooth around which are changes so gross as to be easily demonstrated by X ray examination, has been infected for a long time and the tissues have been able to set up some sort of a defence; whilst in the more recently infected where X ray examination can reveal nothing, absorption is more likely to occur and to produce ill-effects. This point I think is worth bearing in mind and I have found the only slightly suspicious tooth often the cause of trouble. Therefore it is well to go over the same ground again and again as well as exploring new in the search.

Next to teeth come tonsils in order of suspicion and Pemberton in his account in Nelson's "System" instances a series by Lillie and Lyons of two hundred consecutive cases of tonsillectomy for arthritis with improvement in 79%. They concluded that in obstinate cases of arthritis there is a definite chance of improvement after tonsillectomy, even if tonsils appear healthy. It seems to me extremely difficult to judge whether a tonsil is capable of causing trouble, although I am not quite so brave as Pemberton who says: "It is to be doubted whether any observer, however qualified, is competent to state that a tonsil is entirely normal."

The accessory sinuses may be long infected without the patient being aware of the fact. Therefore I think part of the routine examination should include that made by the ear, nose and throat specialist. The genito-urinary tract may harbour the source of trouble and together with the intestinal tract must be searched, as well as may be possible, after the more obvious foci have been dealt with or failing the discovery of such.

The origin of trouble may, of course, not be focal but general throughout the system, an attack of *arthritis deformans* following enteric fever or influenza *et cetera*. Apart from the search for and elimination of infection treatment must be directed towards the elevation of the general tone of the body as regards metabolism.

In the article of Pemberton, already referred to, he notes a lowered sugar tolerance in the subjects of arthritis. This he considers only an indication of some disturbance of general body metabolism predisposing to the disease and not an effect of the disease itself. This observation is borne out by those of Dr. Hansman who informed me some time ago that he had frequently noted an association of hypothyreoidism and arthritis when engaged in basal metabolism tests. This supplies a reason for the empirical exhibition of thyreoid extract so often followed by good results.

Hygienic and dietetic factors must be considered and errors corrected.

Treatment of the Local Condition.

As already mentioned, treatment of joint involvements should begin concurrently with the treatment of the general condition. The aim of treatment here is first relief of pain. This to the patient is all important at the time. In a disease such as *arthritis deformans* the use of narcotics is to be avoided as much as possible. Treatment will vary in difficulty with the extent of the joint involvement.

The Acute Stage.

The first principle in acute arthritis of any origin is to put the inflamed joint at rest. With a single joint it is easy, but when there are several affected, then the task is more difficult. The patient will arrange the limb so as to give the minimum of pain, but such a position will generally be faulty and will increase the difficulty in restoring to normal function once the acute state has passed. It cannot be too strongly urged that the position of joints should be carefully watched from the very onset and by appropriate splinting and constant watchfulness contractures and faulty positions prevented from the start. One too often sees joints fixed in crippling positions through lack of care in the acute stage.

The Subacute Stage.

Once the acute stage has passed the fixation appliances should be removed at first for short periods to allow of treatment and active movement. Massage and passive movement have not nearly so beneficial an effect as active movement either on the stiff joint itself or the muscles controlling it. These latter waste very rapidly. Local treatment may now be pushed more vigorously as the pain lessens in the hope of recovery taking place without loss of function.

The Chronic Stage.

The chronic stage calls for endless patience and courage from both patient and adviser. The first part of the problem is to determine whether the original cause of the trouble is still active. If the disease is still marked by progression in involvement of joints hitherto unaffected or if the affected joints are subject to exacerbations, one may be assured either that the original focus is still active or possibly one of the infected joints has assumed its rôle and absorption is still going on. The search must be continued, the old ground gone over and over. The teeth must be reexamined by X rays, the pharynx and accessory sinuses again examined, the pathological examination of urine, fæces *et cetera* repeated in the hope of discovering and eliminating the cause of trouble. For one may be sure that although local measures may relieve pain and increase movement in the joints, the improvement will be temporary only and the general disability will increase until the focus is cleared up either by our efforts or by Nature.

If, on the other hand, no fresh joint involvement has taken place for several years and no exacerbations have occurred in those affected, it is justifiable to assume that the original focus of infection has been eliminated and one has to deal only with the effects of past activity which, however, lead to the final stage of partial or complete ankylosis on account of diminished blood supply, increase of fibrous tissue in periarticular tissues with contracture, overgrowth of bony parts, erosion of articular cartilage and wasting of controlling muscles through disease.

Physical Methods of Treatment.

First and foremost deal with the prevention of deformity and at the risk of being wearisome I would again stress the importance of this point. The means employed include all kinds of splints, pillows *et cetera* placed to hold a joint in good position. A light plaster will often be the most easily applied and comfortable and can be taken off for treatment. When contracture has occurred, a plaster case divided at the joint level and wedged

out gradually will be found a useful method of stretching the shortened fibrous tissue.

Heat used locally is of great value and is best applied by diathermy. When this method is unavailable, hot air or radiant heat may be employed, but there is no way of heating the whole of the joint structure which approaches the former.

Light should be employed in conjunction with heat and it is difficult to overestimate its value. Heliotherapy is now recognized as an important adjunct to treatment of very many conditions and where sunlight is either deficient or difficult to utilize we have many different types of lamps which are designed to give radiations equivalent to those of the solar spectrum or specially rich in infrared or ultraviolet rays. The benefit derived from heliotherapy probably is due to the stimulation which it gives to the general body metabolism, similar to the effects before mentioned derived from the exhibition of thyreoid gland extract. The local effect of X rays in relieving pain in a joint, so often noted by a patient after a visit to the radiographer, is probably due to some such local action by which oxidation in the thickened periarticular structures is aided with consequent relief of pressure and pain.

Massage is of benefit particularly where active movements for any reason are not able to be used, but cannot replace the latter as regards benefit to the patient.

Manipulations under anæsthesia may be necessary in order to move a stiff joint, but should be undertaken with great caution. The best results from such forcible movement will be in a fairly recent case where contracted tissues about the joint, more rarely adhesions in the joint itself, have not become too dense. The main object of such a procedure is to restore a joint to a position of utility where it can be maintained, for instance a drooped foot to make walking possible. The great objection to forcible manipulations is the trauma produced thereby which will inevitably result in more scar tissue being laid down and if the gain is not maintained carefully a worse condition than before may result. The operation should take the form of a single movement through the range possible (not a series of pump handle motions) followed by active movements as soon as possible.

Surgical Methods of Treatment.

Tenotomy and tendon lengthening are useful procedures in remedying faulty positions of joints. The most common sites where these measures are needed being the *tendo Achillis*, the hamstring tendons and adductors and flexors of the hip. One of the most difficult conditions to restore, resulting from faulty posture, is the contracture at the knee with subluxation backwards of the tibia on the femoral condyles. This condition results from the attitude commonly adopted when there is an acute or subacute condition in the hips or knee joints. That is, with hips and knees flexed and pillows placed for comfort under the knees.

Arthroplasty may be the means of giving great comfort in the later stages particularly when both hips have become ankylosed. Movement at one will restore the power of locomotion.

Arthrodesis will improve function by giving a painless fixed joint in sound position in place of one with some movement accompanied by pain and in a poor functional position.

Synovectomy offers hope of improvement in two directions. The removal of the swollen synovial membrane or as much of it as is practicable gives prompt mechanical improvement in the joint. There is a restoration of painless function. In a series reported by Swett[1] in addition to this result there was an improvement of other affected joints and of the patients' general condition.

He puts forward an interesting theory to account for these remote effects. He considers it possible that one or more of the affected joints may possibly take over the functions of the original focus and by distributing infection keep the disease active and progressive long after the original cause has been eliminated. This theory awaits proof, but is very stimulating. He insists on the need for proper selection of cases for synovectomy, the main indications being elimination of the original focus, where there is no involvement of cartilage and where other forms of treatment have failed.

In conclusion I would reiterate both the need for constant watchfulness in order to prevent deformity and the value of team work in the management of these very difficult conditions.

Reference.

(1) Paul P. Swett: "Synovectomy in Chronic Infectious Arthritis," *Journal of Bone and Joint Surgery*, January, 1923.

A CASE OF STRYCHNINE POISONING: THE BUTE TRAGEDY.[1]

By ALFRED A. LENDON, M.D. (London),
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A FARMER, named Dennis, lost his wife in 1918. A daughter then kept house for him till she herself became married in January, 1923; she was assisted by Ollie Commons, a young woman who came in March, 1919, with her illegitimate son to live at the farm, "Lincolnfield," which is situate about eight miles north of Bute on the Port Broughton Road, and almost twice that distance west from Snowtown. The other adults living at the farm in January, 1926, were his two sons and a daughter, aged fifteen, named Vera, who assisted Ollie, promoted some three years before that to be housekeeper. Had Ollie Commons played her cards well she might have become the wife of Dennis, although the grown up members of the family were opposed to the marriage. Instead of that she became his mistress and continued to have intercourse with him, even though ostensibly keeping company with a man named Tancock. This state of affairs might have gone on indefinitely had not

[1] Read at a meeting of the South Australian Branch of the British Medical Association on September 30, 1926.

another woman appeared in the case, Rita Ranke. Dennis met her first in March, 1923, at the Port Broughton Racecourse, she being then engaged at the local hotel; he corresponded with her much to Ollie's annoyance and a year later became engaged to her. On January 7, 1926, Dennis told Ollie that Rita was coming up to Bute to have a look at the farm; the visit had been contemplated for many months. On January 8 Dennis and Ollie motored together into Bute, when at her suggestion sausages were bought, Dennis having asked her whether she had got all she wanted. Next day, January 9, Dennis drove over to Snowtown to fetch Rita; they reached the farm about 12.15 p.m., strolled about the sheds and finally sat down to a meal of curried sausages, tinned peaches and tea at 1.15 p.m. Before dinner Ollie, when Dennis proposed to introduce her to Rita, intimated that she did not wish to know that b . . . . . b . . . . . The atmosphere had not been pleasant during the week and Ollie had packed up in readiness to leave, though Dennis tried to dissuade her from doing so. The "serves" at dinner were all placed in position by Ollie when the family took their seats; it was Ollie who assigned a particular seat to Rita who up to this time appeared to be in excellent health. Whilst the rest enjoyed their sausages, Rita did not finish hers, but placed her plate to one side, whereupon Ollie got up and removed the plate to a sideboard, but removed no other person's plate. Rita next had some peaches and a piece of bread and butter on another plate. In about half an hour (1.45 p.m.), just as they were finishing dinner, Rita exclaimed: "What's the matter with me? My head is all in a whirl." According to another witness she complained of a bad headache and that her head was swimming round and round; according to a third, she said she was giddy and had a terrible headache, her head was all in a whirl. Dennis suggested her lying down; she immediately rose and left the room for the sitting-room, putting her hand to the door to steady herself and walking as though she were giddy. Rita then called Vera who joined her in the bedroom and in consequence of what was said Vera prepared some mustard and water and brought it in to her, but she did not want then to take it and apparently did not. Rita then came out to the front verandah and beckoned to Dennis. Dennis quickly got his car, put Rita and Vera in the back of it and drove very fast along the road to Bute. The start was made within ten minutes of Rita first being taken ill; in a quarter of an hour they had gone about six and a half miles, when at Hall's farm Vera got out and telephoned to a doctor an urgent message. At this farm they stopped fifteen minutes till the doctor arrived who thereupon transferred Rita to his own car and drove her to the Bute Hospital which was reached at 2.30 p.m.

Although so prompt in motoring her to the doctor, Dennis thought that Rita did not seem to be so very ill, only a bit worried, when she left the farm, but that she appeared to get ill as they went along; he did not however look round. On the other hand Vera deposed that Rita seemed to be getting worse as they drove along; she became stiff in the limbs and was clutching at different things. As soon as they got into the car Vera noticed that her legs were terribly stiff and remained stiff all the trip; Rita clutched sometimes at her and sometimes at the side of the car. She made a loud noise as if in pain; her mouth seemed to get stiff and parched and dry, but she was able to open and shut her mouth; the mouth seemed very dry; she put her tongue out and seemed as if she could not shut her mouth; then she shut her mouth; it would shut tightly like a clenched mouth. At Hall's farm Dennis got out and went to the back of the car, where Rita appeared to be in a fit; the body appeared to be stiff; she was singing out; crying out. Then she got easier and after an interval of five or six minutes had another fit, just as the doctor arrived.

Dennis and all his family disclaimed having tampered in any way with the food. The detectives extracted the following confession from Ollie Commons which was produced in evidence at the Coroner's Court:

> I want to say that I put mouse poison in the sausage which I served to Miss Ranke . . . . I had that poison for some times before. I got it at Bute from a storekeeper. I did it on account of Miss Ranke coming into the home after the way Dennis had conducted himself with me. I felt that I was being pushed out. I put the poison in the sausage. It was a powder. I kept it in the spare room. I make this statement free. No inducement has been held out to me to make it. I have been told I need not make any statement, but I desire to do so. I desire to tell the truth. If I hang, I die for the man I love. I have read this statement and it is true.

At the trial in the Supreme Court Angas Parsons, J., disallowed the confession on the score of undue pressure having been brought to bear upon the accused—a mild form of the "third degree" as practised in the United States.

Evidence of the Doctor.

He received the message from Hall's farm at 2.30 p.m. on January 9, 1926; he drove one and a half miles along the Port Broughton Road and met Dennis's car with Rita acutely ill on the back seat; she could speak to him quite clearly and distinctly and talk quite naurally. After obtaining a rough history of the case, he transferred Rita to his own car and drove her to the Bute Hospital which was reached at about 2.30 p.m. She was immediately put to bed and he remained with her till her death at 7.15 p.m. except for about ten minutes at 3 p.m. Whilst being driven to the hospital Rita had attacks of spasm and cramp through her body, especially marked in the legs. There were intervals between the spasms; the spasms seemed to him to be attributable to the jolting of the car. The process of undressing her was difficult and it seemed to bring on the spasms more frequently; even the getting her into the building was very difficult on account of the spasms, especially noticeable in the legs. These symptoms suggested to him poisoning

by a drug in the nature of strychnine and for such poisoning he treated her. As she could open her mouth for examination, that seemed to exclude lock jaw. The spasm and stiffness involved all the muscles of her body; the whole body was stiff, except the muscles round the mouth which seemed to go into a twitching state. For a few seconds before the spasms came on the head and neck and face seemed to twitch; then she passed into a state of stiffness; the arms were straight out; the legs were straight out; the feet arched inwards in a state of spasm; the arms and hands were clenched across her chest. During the attacks which lasted from one and a half to two minutes, she became purple in the face; the attacks varied in intensity; only on two occasions during the afternoon was she unconscious, once during a very severe convulsion at 5 p.m. and again during the terminal convulsion. The unconsciousness passed off after five minutes and the patient was talking to him quite distinctly (? directly afterwards). She had some slight arching of her back. She asked for water continuously; on her attempting to bring a tumbler to her lips her jaw muscles went into a state of spasm and she could not drink. He took a lump of cotton wool soaked in water and squeezed the water through her lips. At one period during the afternoon she was able to drink; she managed hurriedly to get it down. Spasm of the muscles of her jaw seemed to come on only during an attempt to take water; it was not there continuously. He noticed a dilatation of the pupil when he saw her (? first). The patient had a hypodermic injection of apomorphine hydrochloride 0·006 gramme (grain one-tenth) administered in order to induce vomiting soon after admission to the hospital. She vomited and on examination next day he found strychnine present. The vomit, about eight cubic centimetres (two fluid drachms), was saved for analysis; the stomach tube at the hospital had perished. Following the vomiting and between 2.30 and 3 p.m. a hypodermic injection of morphine, 0·3 gramme (grain one-half) and atropine, 0·86 milligramme (grain one-seventy-fifth) was administered, the idea being to allay the spasms. Somewhere between 4 and 5 p.m. a dose of chloral was given (one gramme or fifteen grains) with some tincture of opium and chloride of potash (probably a mistake for bromide); chloral was not available at an earlier stage or he would have given it by preference. "If I had the patient now I would probably give chloroform now as preferable to the treatment I administered at the time."

During intervals between convulsions she rolled over on her side and pulled her legs up and lay there calmly asleep; he took that to be the result of the morphine; she looked perfectly natural. The only time he noticed spasm of the jaws was actually when the spasms were on her and on attempting to drink; otherwise she could speak and move her jaws perfectly naturally. This would not have been the case if she were suffering from lock jaw, he thought. She often asked to have her limbs held. There was a gradual improvement up to 5 p.m.; then the severe spasm with unconsciousness occurred; then the symptoms seemed to become less intense so that he had hopes of her recovery till the actual end.

The *post mortem* examination was made next day, but how long after death we are not told; it would be safe to assume from twelve to fifteen hours. No mention is made of rigidity nor of the evidence and degree of decomposition. The abdomen was opened first. The stomach was tied off and reserved; the small bowel was similarly tied and removed; no ligature was left on the caecal end of the small bowel. No gross disease of the other abdominal organs was observed. (The state of the bladder was not mentioned.) The thoracic viscera seemed healthy, but some passive congestion of the lungs and fluidity of the blood in the heart chambers were noted. There was no sign of inflammation or corrosion about the mouth or gullet. No sign of disease or abnormality about the brain was found; the spinal cord was not examined.

From his observations and from what he found (? in the vomit ? at the *post mortem* examination) he concluded that death was due to a poison of the nature of strychnine, as he knew of no other disease or poison that would give the exact clinical picture. His conclusion would be confirmed by the fact of nearly 0·026 gramme (two-fifths of a grain) of strychnine being recovered from the stomach and other organs. From his reading he thought that 0·03 gramme (half a grain) appeared to be the accepted minimum lethal dose (for an adult), that symptoms would appear within half an hour, that death might result in anything from one to seven or eight hours, that strychnine usually kills by asphyxia and exhaustion and heart failure, that Rita died of asphyxia.

Evidence of Mr. Rowe, the Government Analyst.

Mr. Rowe, the Government Analyst, testified to finding strychnine in the vomit and in the stomach, small bowel and their contents and separating rather less than 0·016 gramme (one-quarter of a grain). A month later, February 11, Dr. Barlow made a further examination of the exhumed body and from the liver, kidney, spleen and heart more strychnine was separated, bringing the total amount up to 0·026 gramme (two-fifths of a grain). No strychnine was found in the brain, nor in about 27·5 centimetres (eleven inches) of the spinal cord. The brain had been sliced up at the first examination; it and the cord were much decomposed.

Other Evidence.

A storekeeper's assistant proved selling to Ollie on April 17, 1925, three packets of mouse poison which Bickford's representative recognized as put up by them and containing strychnine.

The Defence.

The defence did not contest the fact that strychnine was discovered in the vomit and in the stomach contents *et cetera*, but held that it was not shown that death from tetanus or from ptomaine

poisoning had been with certainty excluded; that it was not incumbent upon them to prove that death was due to either of these alternatives; it was enough if these theories competed in the minds of the jury with the Crown's contention of strychnine poisoning. Certain statements were elicited in the cross-examination of the medical witness, namely:

1. That headache was not mentioned in textbooks as an early symptom of strychnine poisoning.

2. That giddiness was likewise not mentioned as an early symptom, though he had heard of it.

3. That the strychnine found in the stomach and its contents could have no responsibility in causing the death, because it had not been absorbed from that viscus.

4. That he had never seen a fatal case of strychnine poisoning nor indeed any case apparently of such poisoning.

5. That his information was gathered from his studies at college when he won a prize for forensic medicine and from his reading subsequent to the tragedy.

6. That if a competent analytical chemist was satisfied that there was no strychnine in the cord and could prove conclusively that this was so, he would have to abandon the theory of strychnine poisoning.

7. That assuming he knew nothing about the history of the case, he would be able to determine the cause of death as being one due to strychnine poisoning from the clinical symptoms only and (immediately afterwards when talking of ptomaine poisoning) that he would not with certainty be able to diagnose strychnine poisoning from the clinical symptoms only and that he would not with a due sense of responsibility venture to form a definite opinion that death in Rita's case was due to strychnine poisoning without the history of the case.

8. That neither the vomit nor stomach contents were of any assistance in determining whether death was due to strychnine, because it had not been absorbed.

9. That strychnine was a reputed aphrodisiac and as such was frequently taken by persons contemplating matrimony.

The defence also laid stress upon the omission of the Crown to prove that unconsciousness ever occurred in fatal strychnine poisoning and argued that the clenching of the mouth in the early stage, described by Vera as occurring during the drive, was a sign of tetanus and that the Crown ought to prove that it was not due to tetanus; further that no strychnine was found in the spinal cord and that in strychnine poisoning death usually occurred within two hours; there was also the absence of evidence that Ollie had mouse poison in her possession at the time. The defence dwelt on the frequent occurrence of strychnine in patent medicines and suggested that if it were ptomaine, it might have been Rita's bad luck to have struck the only sausage affected and pointed out that no stress had been laid upon the tinned peaches in which the ptomaine germ might have lurked.

Comment.

Perhaps it is no wonder that a puzzled, but sympathetic jury brought in a verdict of "not guilty."

I am not so much concerned with the obvious miscarriage of justice and the evidence that trial by jury is coming to be recognized as an effete and untrustworthy method, but I want to draw attention to the medical evidence.

With the doctor's description of the symptoms that he noticed during life, I am not quarrelling. His *post mortem* examination was adequate as proof of strychnine poisoning, but it was not complete and it had to be completed a month later. What I do think unfortunate is that a man whose only knowledge of toxicology is derived from reading, should be placed in the false position of being examined as if he were an expert and of being asked to stamp the statements quoted from various textbooks with his approval or otherwise, as though he had special knowledge of the subject.

As regards one point upon which stress was laid, namely the complaint of headache as an early symptom of strychnine poisoning, I can certify to its occurrence. I have known patients treated with a daily hypodermic injection of 3·2 milligrammes (one-twentieth of a grain) complain of headache and refuse to continue the treatment. With respect to the pupils what stress should be laid upon them, seeing that the patient was having the strenuous convulsions of strychnine poisoning, when they always dilate if the asphyxia be sufficient and that in the course of two hours apomorphine, atropine, morphine, chloral and laudanum were all administered? As regards unconsciousness any kind of convulsion which would be prolonged enough to cause a sufficient degree of asphyxia would lead to temporary loss of consciousness. In other reported cases of ascertained strychnine poisoning no strychnine has been detected in the spinal cord. In no reported case have I seen mention of it having been recovered from the spinal cord.

MEDICO-LEGAL EXPERIENCES.[1]

By A. F. LYNCH, M.B., Ch.B. (Adel.),
Adelaide.

IN a long experience of medico-legal cases in the various courts of South Australia I have very frequently been surprised at the poor showing of medical witnesses on medico-legal questions. And when I say that very often the most learned and skilful members of our profession make the poorest witnesses, I am only voicing the opinions of those engaged in the pursuit of the law most competent to express an opinion.

[1] Read at a meeting of the South Australian Branch of the British Medical Association on September 30, 1926.

It is a matter of common knowledge that to most of us the obligation to appear and give evidence in a court of law creates an impression of a disagreeable and uncomfortable environment. And yet a medical witness is called upon to testify only on matters in which he has been specially trained. It is the application of this knowledge to the requirements of the law which most of us find so difficult and so disturbing. The obligation to appear in court and give evidence begins with the granting of a medical diploma. From that joyful day when he or she becomes a fully qualified medical practitioner, he or she is liable to be called upon to perform *post mortem* examination, to give evidence in a coroner's court and quite possible later on to give evidence in the criminal court, where the medical testimony many be a big factor in depriving an accused person of his liberty or even placing him within the shadow of the gallows.

From this chain of events he has no escape. It is one of the responsibilities he has thrust upon him by his country. And from the training necessary to secure his degree it should present few difficulties. True, his mind may have to travel the whole gamut of anatomy, physiology, medicine, surgery, midwifery, gynæcology, physics, chemistry and bacteriology. But the fact remains that very frequently his evidence in the witness chair creates an impression of carelessness or incompetency and when to this are added the replies given in a severe cross-examination by a skilled advocate it is many times chaotic.

Is it due to nervousness? Sometimes I think it is. The atmosphere of the courts, especially during the criminal sessions and more particularly during capital charges with their surroundings so unfamiliar to our profession, presents an air of solemnity which tends to create confusion in the medical mind.

This condition of things could be obviated or certainly modified considerably if during his senior student days he attended the law courts and learned and became accustomed to their procedure. It would not take up a great deal of his time. The sessions are held quarterly and a special case could be selected for a group of students to attend. Law students attend as part of their education and why should not medical students do likewise and get a practical lesson in the application of their medico-legal lectures.

I have for some time past urged on the fifth year students the desirability of gaining this experience and have notified them when important cases were being heard. To spare the time was their great obstacle. Lectures and reading up the subject are necessary and important. I know that. But what a great advantage it would be to watch and listen to teaching being put to the practical test!

Because of this inexperience and unfamiliarity the Crown Law authorities are many times confronted with reports of *post mortem* examinations which are incomplete and otherwise unsatisfactory. There are many instances on record in which exhumations have been necessary because of incomplete *post mortem* examinations and records. When to this are added the poor exhibitions of some medical witnesses, it can be realized how difficult it is for the Crown to conduct their prosecutions successfully.

Should this condition continue or can it be remedied? A suggestion has been made that—as obtains in some other States—an expert be appointed to undertake these duties on behalf of the Government. I have advocated it for years. He should be competent and experienced in making *post mortem* examinations—not necessarily a pathologist. This part of the work could be delegated to the laboratory as at present. He should be available for duty all over the State as the Government medico-legal expert. The chief difficulty so I understand is the salary—it invariably is—and a man for such a position should command a good reward for his services. He should be experienced in all branches of his profession, a keen observer of facts, with a logical mind in the matter of opinions and conclusions and deductions drawn from facts.

I commend this matter most earnestly to the Council of the Branch as a most important one. Its influence would be much greater than individual representation and from personal knowledge I can say such an appointment would be most agreeable to the Crown Law authorities and would greatly facilitate the presentment of their cases. However, until such an appointment is created, we must individually shoulder the responsibility, however unwillingly, of being called up as medico-legal experts.

I hope I will not be considered presumptuous in addressing the younger members of the Branch on some hints gained from personal experience.

Firstly let your *post mortem* examination be thorough and exhaustive. It is not sufficient simply to demonstrate the existence of a fatal lesion, because all other possible fatal lesions of the organs must be shown by actual examination to be absent, before any existing lesion can be stated as the actual cause of death. Make full and copious notes at the time and preserve them. You will be allowed to refer to them in the courts if they were made at the time of your examination. Do not trust to your memory; it may play you false and cause you some uncomfortable moments at the hands of a subtle cross-examiner in the criminal court. Retain and preserve any parts necessary for microscopical examination or chemical analysis. Seal them and hand them over to the authorities. Do not take charge of them yourself. Their identification after a lapse of time may prove difficult and the defence may question your accuracy and quite possibly your honesty. It is quite a common occurrence for medical men in such positions to come to certain conclusions which savour of bias—unconscious I admit—but still bias. Above all things be scrupulously honest in your convictions and conclusions. Do not give a positive opinion if the slightest doubt exists in your mind. Do not be ashamed to say: "I do not know," "The omniscient mind is a myth." The domain of scientific medicine is now so vast that no single mind can compass all its branches.

"The absolutely unerring eye and the invariably unfailing ear have only a theoretic existence."

At coronial inquiries you will in most instances be called upon to state facts only which you may know of the case leading up to death and the notes of your *post mortem* examination. Detail these in a proper sequence to avoid confusion and give your opinion as to the cause of death. Be sure of your ground on this point. Eliminate all other possible causes. You may be severely harassed later in the criminal court by an attempt to show that death took place from some other cause. Here is where a thorough examination and a complete record shows to your great advantage.

When the case reaches the criminal court, you will be called upon to give testimony similar to that given at the coronial inquiry with the addition that you may be subjected to a lengthy and severe cross-examination by an advocate of high standing and great brilliance. And do not run away with the idea that because he is a lawyer he knows nothing of medical problems, while you secretly flatter yourself you are the embodiment of medical knowledge. Frequently lawyers have quite a good knowledge of the medical points of a case. It is a matter of common occurrence for them to be schooled by a medical man who is not only well versed in his profession but also accustomed to the procedure of the courts.

Only recently I was instructed by the defence in a case of suspected poisoning by strychnine wilfully administered in food. The learned King's Counsel after two conferences showed such a wonderful grip of toxicology that unaided he carried on a cross-examination of several hours which ended in the confusion of the medical witness and eventually secured the acquittal of his client. And not one equivocal question was asked of the medical witness during the whole of his lengthy cross-examination.

In this case the medical witness frankly admitted he had never seen a case of strychnine poisoning previously, but from his reading he came to the conclusion that the condition was due to strychnine. The woman was in violent spasms and a hypodermic injection of morphine and atropine was administered. In cross-examination he admitted there was no chloral at hand, if there had been he would have given it. He admitted it was indicated in every textbook produced in court as the first line of treatment. Although chloroform was available it was not used, as it was considered too depressant. He was then asked if the action of chloral and chloroform was not identical?

The woman lived about six or seven hours after partaking of the suspected meal. The witness told how she was almost continually in convulsions, beginning in a stiffness in her limbs early in the afternoon and an almost continuous tetanic spasm up to her death. It was admitted that recovery had taken place after the taking of 0·24 gramme (four grains) of strychnine, four hours previously, when chloral and chloroform had been used.

An unfortunate omission at the autopsy was the neglect to preserve the liver, kidneys, spleen, urine and spinal cord for chemical analysis. The stomach and the vomit were preserved, but the fact was overlooked that beyond showing the presence of strychnine in these exhibits it could not be regarded as the cause of death, as when strychnine causes death it is the quantity absorbed that causes a fatal issue, not the unabsorbed portion. This incompleteness at the autopsy necessitated an expert pathologist making an exhumation for the purpose of securing the organs of excretion at a later date when decomposition was far advanced.

I am not detailing this case in any captious spirit; I know my own limitations, but I hope it serves to emphasize what I said previously that it is an unfair responsibility to thrust upon a medical practitioner who has no pretensions or desires to pose as a medico-legal expert, with the possibility of a long and harassing cross-examination.

In this case from the witness's inexperience in strychnine poisoning, he admitted the symptoms might equally have been due to ptomaine poisoning or tetanus.

The question of the detection of strychnine in the spinal cord was hypothetical. It was framed into a chain of questions on the fact of its solubility and its absorption unchanged into the blood stream. It was assumed therefore that it would be present in the vessels of the cord as elsewhere either in solution or as strychnine unchanged. Taylor's "Medical Jurisprudence," Seventh Edition, quotes this and gives an authority. The convulsions were admitted as due to a cerebro-spinal poison and the jury were evidently impressed when the analyst admitted that no strychnine was found in the spinal cord.

When medical experts are engaged on each side in civil as well as in criminal cases they are in a manner opposed to each other and it is only natural that each does his best for the side that pays for his services. If possible have a conference with the medical expert on the other side. Thus you may avert the sorry spectacle of one medical witness, harassed by a critical cross-examination, disputing the opinions of his medical *confrère*. We are only witnesses of truth after all and should sedulously avoid bias. As matters now are, judges generally speaking are unimpressed by experts, juries discredit them and experts themselves chafe under the stigma attached to their testimony.

And speaking of experts reminds me of a case in which three medical experts on one side (I was nominated one) were definitely opposed to three medical experts on the other side. The conflict of opinion so vexed the judge that he said it reminded him of a quotation modified to suit the occasion, that there were three grades of liars. The liar, the d——d liar and the medical expert.

You are quite within your rights in refusing to give evidence as an expert if you have the least doubt as to your competence on any particular question. Your evidence becomes more valuable because of your acknowledgment of liability to error. Avoid technical medical and scientific terms. Common, every day Anglo-Saxon appeals best to the every day juryman. Never lose your temper in the witness's stand. The cross-examiner may attempt to irritate you both by his manner and his questions. He does this to minimize the value of your testimony. Be careful, clear in mind and take no offence at his attitude. You may be asked if you agree to quotations read out in court from medical works. Listen carefully before replying and ask for the question to be repeated if you do not fully understand it. You are allowed to ask to see the authority and read it yourself. I was asked on one occasion to agree with an authority on breast cancer who recommended morphine and cocaine as a curative measure. The date of the volume I found on asking to see it was 1880 !

It is a matter of great importance if called upon and you find the person dead, to make a careful inspection of the body and its surroundings and to leave instructions that nothing is to be disturbed until the police arrive. As you will probably be called upon by the coroner to make a *post mortem* examination, specially request that the clothing be not disturbed. I invariably do this as I much prefer to unclothe the body myself. You never know what information you may find to help in forming an opinion on events leading up to and causing death.

An illustrative case was that of a domestic from a city hotel found dead on one of our beaches many years ago. On the day previous to her death her employer noticed her strange manner—she was restless, negligent and complained of headache. Her general behaviour led him to suspect that she had been drinking. He remonstrated with her and sent her to bed. She did not sleep, but became noisy and argumentative and in exasperation he dismissed her in the evening. She walked out of the hotel almost into a tramcar which was pulled up to avoid colliding with her. She boarded it and on reaching the seaside terminus was so confused that the conductor asked her to get out. He thought she was intoxicated. She walked to the end of the jetty which was deserted. Nothing more was seen of her alive. In the morning her dead body was found at the water's edge, fully dressed including her hat and veil. At the end of the jetty I found her handkerchief on a seat and evidences of vomiting and on the steps at the side of the jetty her parasol and handbag were found. On the handrail close to the water a wisp of hair resembling hers was found caught in the splintered edge. The whole of the circumstances pointed to suicide. On undressing the body I found her underclothes unfastened and hanging down and solid fæces adhering to them corresponding to her anus. Fæces were also found on the steps. An examination of her skull revealed cerebral hæmorrhage not from any particular vessel that I could determine, but more of the nature of a general capillary oozing. There was a thin smear of fluid blood all over the surface of the brain. The stomach was empty, there was no evidence of alcohol. Piecing all the facts together we came to the conclusion that her dulness, irritability, stupidity and vomiting were due to her cerebral condition. The desire to evacuate led her down the steps and with her clothes disturbed she toppled head foremost into the water and was accidentally drowned.

This case brings to my mind six or seven cases which came under my notice at different periods of unexpected death during sleep in young women, in all of whom I found the same condition of hæmorrhage on the surface of the brain. There were no injuries or pathological conditions found at the autopsies to account for the blood. In each case they had been in the habit of taking antipyrin, a new and fashionable drug in those days. We could ascribe the death in each instance only to the taking of this drug. I vainly searched medical literature for parallel cases.

The domestic referred to previously was likewise a taker of antipyrin to excess.

A particularly brutal and savage murder was that of a white woman by an Indian husband. Justifiable jealousy led her people to be suspicious of his actions and when she failed to keep an appointment on a certain day they went to her home in search. The house was locked up and seeking the police they forced an entrance. The dining room was in confusion and a small length of mallee wood was on the floor. Underneath the bed her clothes were found in a heap in the order of undressing from her hat down to her shoes. There were bloodstains on the kitchen door handle and the bloody imprint of a human left hand on the bathroom door. Bloodstained towels, an American axe and an ordinary dinner knife were found in soak in the bathroom. From the kitchen door a trail as if something had been dragged along the ground, led to the end of the yard and here was found a large area of soft blood clot, with several indentations in the soft soil into which the axe fitted exactly. On some adjacent palings and bamboos there were many showers of dried blood evidently from large spouting arteries. Human hair and two cleanly cut wedges of bone from a human pelvis and a vertebral body were also found.

We proceeded to the police station with the exhibits and to our intense surprise found the husband, his clothes bloodstained and blood on his hands, detained under suspicion. He had gone there to report the loss of his pony cart, it was in the police yard, having been found overturned near the river and driven by some boys to police headquarters. He stoutly denied any knowledge of his wife. Black trackers indicated that the trap had stopped near one of the city bridges. The river was dragged and a bag recovered which contained the upper half of a woman's body. It had been severed through the lumbar vertebræ. The lake had to be drained to secure another bag containing the two lower extremities divided through the symphysis and sacrum. The fragments of bone found in the yard fitted exactly into their positions when the body was pieced together, thus establishing the connexion between the body and the yard of the house. There was a depressed fracture of the frontal bone.

The course of events in the tragedy evidently began in an altercation which ended when he struck her with the piece of wood. Thinking he had killed her, he undressed her and dragged her to the end of the yard and with a dinner knife and an axe, while she was still alive, cut and chopped the body to fit into the bags. The pony cart was used to take them to the river and something startled the pony and it made off. The bloodstained trap was extra evidence. He paid the supreme penalty.

Quite recently a very interesting medico-legal case occurred at one of our large hotels.

A city doctor was called by telephone to come to see a very ill woman. When he arrived he found the bedroom door locked. A porter was summoned and the door opened by an office key. In the room they found the body of a young woman dead on the bed and no one else in the room. The police instructed me to survey the body and the room before removal of the body to the morgue. The body lay on its back on the side of the bed with the head towards the foot of the bed. The knees were bent upwards and outwards. The undergarments had been removed and the outer dress pulled up above the pubes. Folded towels had been placed under her buttocks. They were bloodstained and there were bloodstains on the lower part of the abdomen and the thighs. The pubic hair was matted with a bloodstained, soapy froth and this had flowed on to the floor leaving a large white stain. The body was warm. On a settee a suitcase contained a Higginson's enema syringe, a marbled cake of castile soap recently pared, a small table knife and a bottle of "Lysol." The syringe was dry externally, but compression of the bulb produced a small quantity of clean water and in the valve at the end a small fragment of soap of the same pattern as that in the suitcase was found. In the bathroom adjoining there were evidences of bloodstained fluid having been emptied into the wash basin.

It was evident some interference had recently taken place and that death had occurred rapidly and unexpectedly. The room had been partly tidied up in a great hurry and the door locked and the key taken away.

At the autopsy the uterus was found to contain a two to three months' fœtus. There were no marks of interference. A frothy bloodstained fluid issued from the vagina. The *os* was patulous and on opening the uterus the amniotic sac was intact. It was separated from the uterine wall almost entirely and a small quantity of bloodstained, frothy fluid smelling of "Lysol" was imprisoned. The internal organs

were normal. On opening the heart the right auricle and ventricle contained frothy blood. The left side of the heart was empty. Death was certified as due to air embolism caused by criminal interference with pregnancy.

In all probability the air had been introduced by the syringe into the veins through the uterine sinuses. There was no other possible explanation of the presence of air in the heart chambers and the connecting veins. The autopsy was performed nine hours after death, thus precluding bacterial gas production.

I could find little help from the literature on the subject. It was the third case in my own *post mortem* experience and each was a case of criminal interference with pregnancy. Neither Taylor's "Medical Jurisprudence" nor Glaister's "Manual of Medical Jurisprudence" makes any mention of the condition. The "American Textbook of Obstetrics" records forty-four cases. De Lee's "Principles of Practice of Obstetrics" refers to a parallel case—the use of a bulb syringe in a four months' pregnancy. He sounds a note of warning in uterine tamponade in *placenta prævia* and quotes a case in his own experience in which collapse from air embolism occurred and the patient recovered. In the *Journal of the Medical Society of Copenhagen*, January 7, 1926, Fog comments on air embolism when speaking of the number of cases of septic abortion in recent years. He gives details of nine cases in which death had occurred from measures to induce abortion by the use of a bulb syringe. The interval was short between the introduction of the syringe and the fatal collapse. Fatal shock has been known from such intervention. Fog thinks that air embolism was probably responsible for the fatality in these cases. It was beyond question in three examined with a view to this possibility, and as the findings in all these cases closely corresponded, it is more than probable (he says) that air embolism was the cause in all. The syringes commonly used for abortive purposes are liable to introduce considerable air with the fluid and induce high pressure.

It is surprising how few cases of air embolism are on record. When one realizes the number of syncopal attacks and sudden deaths in the puerperal state, one is led to the conclusion that the condition is frequently overlooked.

THE USE OF DIATHERMY IN EXTERNAL NEW GROWTHS OUTSIDE THE MUCOUS CAVITIES.

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IN deciding the method of operation upon any external neoplasm the main *desiderata* are:

(i.) Certainty of eradication.
(ii.) Minimal destruction of adjacent healthy tissue.
(iii.) Minimal resultant scarring.
(iv.) Minimal hæmorrhage.
(v.) Minimal postoperative pain.
(vi.) Speed in operating.
(vii.) Minimal resultant shock.

In diathermy properly applied we have, I believe, a method that fulfils these aims in a manner more sure and certain than does any other technique at our disposal.

Let us consider these seven points *seriatim:*

(i.) The destruction is carried out with the growth *in situ*, so that in case of malignant disease we escape all risk of reimplantation.

(ii.) As the malignant cell is destroyed (*in vivo* at least) by lower temperatures than is the body cell, we know that for a definite zone beyond the actual line of destruction the tissue cells are unharmed, while they are nevertheless sterilized in regard to stray nests of infiltrating malignant cells. If we bear this in mind, it can be seen how some small but appreciable amount of healthy tissue can be conserved.

(iii.) The lessening of deformity is further secured by the fact that the scar resultant after electrocoagulation—by correct diathermy technique—is soft, pliable and not contracted.

(iv.) Primary hæmorrhage is entirely abolished, as all vessels and their blood content are coagulated with the growth.

(v.) Postoperative pain is greatly diminished by destruction of all nerve endings.

(vi.) A great saving of time is effected during the operation, as there are no vessels to be picked up and no stitches to be inserted.

(vii.) Absence of shock is the natural corollary to the last three factors.

In the foregoing paragraphs I have been insistent upon the correct usage of diathermy. Before this mode of treatment can attain to the prestige and success that it merits, surgeons must realize that a diathermy machine is not a glorified cautery. Cautery technique, applied to this work, will give neither the cures nor the æsthetic results that should follow. In point of fact diathermy improperly used, is not so efficient as a cautery well applied and will give the same indurated, contracted and often pigmented scar.

As important as correct technique is the choice of reliable apparatus. Diathermy machines, such as are sold by the large reputable firms, are all quite capable of the type of work covered in this paper, but to buy one of the cheap "all use" machines is to court disaster. I have in mind one in particular which is alleged to give not only two types of high frequency diathermy current, but to supply also currents to operate a cautery, a diagnostic lamp and a violet ray tube. All this is sold for about half the market price of the smallest reliable diathermy apparatus. The surest economy is to acquire from some reputable firm (preferably X ray machine manufacturers) a machine designed for thermopentration alone.

Most modern diathermy apparatus will deliver two types of current suitable for surgical use:

(i.) A monopolar current of extremely high voltage and unappreciable ampèrage (Oudin).

(ii.) A bipolar current of moderately high voltage and very appreciable ampèrage (d'Arsonval).

Oudin Current.

The Oudin current carries up to a maximum of 600,000 volts. This huge potential enables the current to return from the patient to the coil of the machine by way of the table, floor, walls *et cetera*. A dispersing electrode (*vide infra*) is not needed.

To apply this current a small, pointed electrode, carried by a highly insulated handle, is held some fraction of an inch from the spot to be treated until an electric arc is established between electrode and patient. The distance between the electrode and its point of application will vary from 1·5 to 6 millimetres (a sixteenth to a quarter of an inch), according to the strength of current used.

The action of the current is by virtue of the heat generated by the electric arc thus instituted.

d'Arsonval Current.

The d'Arsonval current comparatively speaking is of low voltage (ranging up to a maximum of about 50,000) but the ampèrage carried is considerable.

The small portable machines will deliver two or three thousand milliampères and the larger machines six or eight thousand. The latter heavy current is used only for medical application. It is seldom or never that the surgeon will need more than two thousand five hundred or three thousand milliampères even for such heavy application as required for uterine cervical cancers.

The d'Arsonval current is applied by the bipolar method, that is to say a second path must be supplied for the return of current to and from the coil of the machine, as will be described under the heading of technique.

The action of this current upon the tissues is entirely due to the heat generated in the tissues themselves by virtue of their own resistance to the current flowing. As one electrode is large and the other small, this effect is concentrated under and about the smaller electrode (see Figure I.).

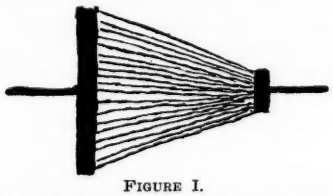


FIGURE I.
Illustrates condensation of current at the smaller electrode. It is condensed inversely as the square of the mean radius, that is, as area.

Technique of Application.

Surgical diathermy makes use of three methods in treatment:

(i.) Electrodesiccation.
(ii.) High frequency cauterization or fulguration.
(iii.) Electrocoagulation.

Electrodesiccation.

Electrodesiccation is obtained by the use of the Oudin current in its weakest phase.

The clinical indications for its employment are small superficial lesions such as moles, warts (venereal and otherwise), nævi, keratoses, small epitheliomata *et cetera*.

Except in sensitive areas or nervous subjects this technique may be quite often employed without the use of even local anæsthesia.

I recall one patient, referred to me, of venereal warts on the *glans penis* and prepuce that had resisted the usual mercurial and caustic applications. I destroyed between thirty-five and fifty warts in three sittings, without discomfort to the patient, beyond a very moderate stinging. The whole application was less painful than would have been the infiltration of the area with local anæsthetic and moreover there was no pain subsequent to any of the treatments.

A finely pointed electrode is selected and with current cut down to the desired level, its tip is held some two millimetres (one-twelfth of an inch) from the surface to be treated. In passing it may be mentioned that, if the operator or any of his assistants should brush against or tip the patient while the current is on, an unpleasant sparking may result between the surfaces so brought into light contact. However, good firm contact, if made or broken without hesitation or continuously sustained, will evoke no demonstrable sensation.

The biological effect upon the tissue is one of desiccation. The area treated turns white as the vital fluids are driven from the cells.

The objective is desiccation alone. The current must never be applied in such concentration or for such length of time as to produce a trace of charring.

In illustration of this, a pretty experiment can be performed to demonstrate to what *finesse* of control this technique lends itself. A sheet of paper is laid over a piece of soap and, through this sheet, areas of soap may be dehydrated without any evidence of scorching on the paper.

High Frequency Cauterization (Fulguration).

High frequency cauterization consists in an intensification of the process of electrodesiccation. It is applied in such concentration that a superficial eschar is formed. This is scraped away, if the depth of the growth demands, to make provision for a further application and so on, until layer by layer the growth is destroyed and removed.

This treatment naturally calls for the exhibition of some suitable anæsthetic.

High frequency cauterization finds its greatest service for use in the mucous cavities, bladder and rectum. I think that in general its use for external growths is contraindicated. Both desiccation and electrocoagulation offer superior æsthetic results, while any growth too large or too malignant for desiccation is more safely and expediently coagulated by the technique described in the next paragraph.

Electrocoagulation.

Electrocoagulation is a valuable method of tumour destruction and requires the d'Arsonval current with or without an ammeter in the circuit. It has the great advantage of not only devitalizing the

tumour, but of simultaneously sealing the adjacent blood and lymph vessels, thus effectively obviating reimplantation of malignant cells. It has an added advantage in devitalizing malignant cells for a greater radius than body cells (*vide supra*).

It has always been a great drawback to radium therapy, that for some distance beyond its zone of lethal action, there is tissue cell damage, leading to impaired metabolic response of cells with slow separation of sloughs and delayed healing. In contrast electrocoagulation has an "all or none" lethal action. Cells are killed outright or rapidly recover.

Owing to the moderate voltage of the d'Arsonval current there must be provided a second electric path between patient and apparatus as well as that provided to the active electrode. To effect this we carry an insulated wire from the machine to a large, flat malleable metal electrode applied to some suitable part of the body. This is called the negative or dispersing electrode. It is held in place by an elastic bandage. To insure adequate contact the subjacent skin is first generously lathered with shaving soap. The mild warmth and perspiration that the flow of current will induce, is enough to keep it moist.

It is essential that this electrode should have at least 6·4 square centimetres (one square inch) of surface area for each hundred milliampères of current used. If this is not allowed we may have a dangerous condensation of current beneath the electrode with resultant burns. Again, for the same reason all wrinkles, sharp edges and corners must be eliminated from this negative electrode before its application.

Details of Operation.

While small growths are best treated in conjunction with local anæsthesia, the destruction of large growths should be done under general or regional anæsthesia. Ether may safely be used, provided that reasonable respect be paid to its inflammable nature.

Active electrodes, as supplied by the manufacturers, consist generally of a series of interchangeable buttons, knobs and needles which screw on to a common insulated handle. As far as the two former are concerned this is quite satisfactory, but I have found it more serviceable to have for the needles some handle to hold ordinary surgical needles of various sizes and shapes. To this end I had made for me two vulcanite handles, as illustrated, one to hold needles in its own axis, the other to hold needles at an angle of 45° to its axis (see Figure II.).

I have also found electrode handles with switches incorporated to be clumsy and inefficient. A foot switch under the operator's own control is essential for delicate work.

With all current off and all dials set for the minimum current a needle is thrust into the tissues just wide of the growth (see Figure III.).

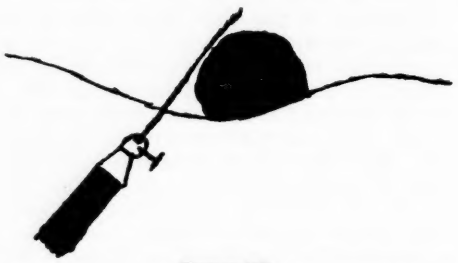


FIGURE III.
Showing Placement of Needle in Relation to Growth.

The foot switch (or other) is closed and the current gradually increased by an assistant. Devitalization is manifest by the change of the tissue to a horny hue. It is carried on until a cylinder of coagulum which varies (according to the dimensions of the tumour) in cross section from that of a knitting needle to that of a lead pencil. This process should never be allowed to proceed sufficiently to give rise to sparking, for should this ensue, charring is inevitable.

When a cylinder of coagulation is finished, the needle is withdrawn and reinserted beside it. Another cylinder is now coagulated confluent with the first. This sequence is repeated until the growth is separated from normal tissue by a layer of homogeneous coagulum.

If desired a specimen may now be taken with impunity from the unaffected centre to send to the pathologist.

In the case of a small growth the whole is covered with compound tincture of benzoin and left to separate. If the growth is at all extensive, it is cut or curetted away down to the line of destruction. Any signs of untouched growth remaining can now be treated in the manner described in the next paragraph. Any bleeding points may be immediately controlled by a touch of the active electrode.

The original method of electrocoagulation consisted of pressing a discoid or olivary electrode against the growth so that coagulation might take place beneath it. The great objection to this method is that refinement of control is impossible except

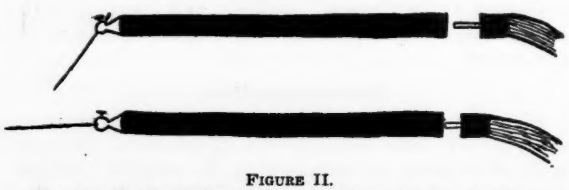


FIGURE II.
Showing Needle Holders. The push-in method of attaching to electric cord is also shown.

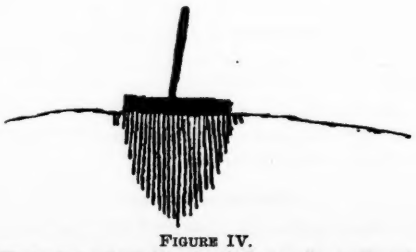


FIGURE IV.
Illustrates extent of coagulation under a disc or button electrode.

at the surface. The coagulated tissue is more or less cone shaped (see Figure IV.) and it is obvious that a whole block of tissue would have to be coagulated to reach a small growth situated at any depth (see Figure V.).

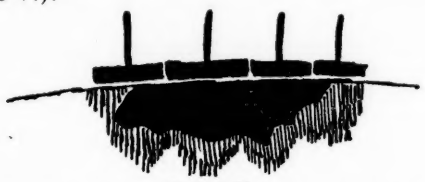


FIGURE V.
Illustrates the wasted areas of coagulation following the old technique. If but one large disc had been used, there would have been even more.

A refinement for the treatment of small growths about the face that I have not seen described before, consists in placing a series of needles (straight or curved) under the growth. They must be parallel and as close as possible though not touching (see Figure VI.). Each needle in turn is touched by the uninsulated tip of the holder and then withdrawn. This method allows of very accurate placing of each individual stab.

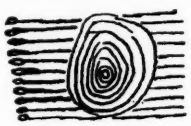


FIGURE VI.
Illustrates new method of placing all the needles before coagulation is begun.

It must always be kept in mind that should any large vessel be in the immediate vicinity of the field of operation, it must be ligated either at the time of operation or at any rate before secondary hæmorrhage is possible.

It is legitimate to irradiate the field of operation with X rays for therapeutic purposes when healing has been established. This is another great advantage that diathermy possesses over radium.

THE MANAGEMENT OF NARCOSIS IN CHILD-BIRTH.

By S. E. HUMPHREYS, M.B., B.S. (Melb.),
Beaufort, Victoria.

UNTIL too recently, child-birth has been looked upon as a physiological process only. Now it is coming into its own and the average practitioner, while he knows how poorly paid are his best efforts, is finding more interest in what was oftentimes merely a constant if unexciting source of income.

I do not intend to discuss any more than the management of a case of child-birth under narcosis.

I take it for granted that no man who enjoys midwifery, any longer tolerates the old impossible conditions, namely, dirty homes, untrained midwives, unprepared patients, unseen perhaps until labour had commenced, oftener until it was ending. But it cannot be too strongly urged that ideal conditions are necessary before the refinement of narcosis can be thought of.

The mental shock resulting from the pains of labour with its physical manifestations for months afterwards is no more "natural" than are sepsis and uncorrected, faulty presentations. This assertion is proved by the numbers of quick recoveries after painless labours and by the absence of pale, weakly-emotional women with falling hair and ridged nails and other evidences of nervous shock.

During the last eight years I have tried in about two hundred and fifty cases to lessen the shock of labour by using various means, but only in the last three and a half years in one hundred and forty-seven cases have I reached a large proportion of success—more than 90%. I commenced with morphine and hyoscine hydrobromide; then I tried in six cases the administration of ether by the rectum; twice I used hypnotism (both patients had previously been prepared). Most of my results by all methods were "partial successes" and "failures." Occasionally I met with a splendid success and these occasional "successes" were the cause of my persisting, for the "failures" were generally ungrateful patients.

Next I graduated dosage according to body weight and gave smaller or larger doses when a patient was under or over 63 kilograms (ten stone) in weight. The number of successes increased, but I found it more convenient to give the same larger doses to all women, a greater or smaller number of injections being required by different patients. Small women, as a rule required fewer doses than heavy women. This attention to dosage did not give by any means uniformly good results. It was at this point, about three and a half years ago, that I came to the conclusion that the secret of success lay in the nursing management of the patient and in attention to every minor detail of nursing technique.

Dosage.

With variations in individual cases I employ as a rule the following doses:

For the first injection I give morphine, sixteen milligrammes (one-quarter of a grain); atropine sulphate, 0·43 milligramme (one one-hundred and fiftieth of a grain); hyoscine hydrobromide, 0·65 milligramme (one one-hundredth of a grain). After one hour for the second injection I give hyoscine hydrobromide, 0·65 milligramme (one one-hundredth of a grain).

After the second hour I give a third injection of the same quantity of hyoscine hydrobromide. After the third hour I give a fourth injection of the same quantity of the same drug. The patient is allowed to rest for four hours and the dose is repeated.

Conditions Necessary for Narcosis.

The conditions necessary before undertaking narcosis in child-birth are as follows:

(i.) All work must be done in hospital.

(ii.) The doctor himself or a nurse trained in every detail of the technique must attend the patient throughout.

(iii.) The patient must not be within four hours of delivery (as nearly as can be estimated) when treatment is begun.

(iv.) Position and presentation must be known; pelvic measurements must be known; also it must be known that the child is alive (by hearing heart sounds or noting movements).

(v.) Burroughs Wellcome and Company's drugs must be used. Two absolute failures during the last three years have occurred when I departed from this rule.

(vi.) A *primipara* must not be given her first injection until she has felt the real pains of labour. I generally commence injections with *primiparæ* when the *os* has dilated to the size of three shillings or more and then only after informing the patient or her friends that "labour is only commencing" and that "many hours of increasing pains may be expected."

Routine Management in Detail.

Routine management in detail is the most important part of the whole treatment; without strict attention to this and in spite of drugs a failure may occur.

The patient has received careful antenatal treatment. She reports that she is in labour. She is prepared in the ordinary way by the nurse. She has a bath and the bowel is washed out; thighs, buttocks and perineum are painted with tincture of iodine.

She is encouraged to take a small meal—usually tea and biscuits—more if she desires it. Then she is told that she must cooperate with us, that she will expect to feel drowsy and that pains will become less severe and will leave her. She is always ready to cooperate.

Artificial dentures are removed. Avenues of perception are closed as thoroughly as possible; a firm bandage is placed over the eyes and plugs of cotton-wool and vaseline are inserted into the ears. She is settled on her side in a comfortable position, the attendant making sure that the shoulders and arms are comfortable and that the patient does not "lie upon" them. The first injection is given into the arm or thigh and the room is darkened.

The doctor and nurse are dressed in white overalls; she has seen them before settling down. Each time they enter the room they must be similarly attired, lest during the course of narcosis the patient should lift the bandage from her eyes and catch a glimpse of (say) a dark suit. The fact that a woman has chanced to see me in a dark suit has been sufficient to ruin an otherwise successful narcosis. So, it is of importance that anything a patient happens to see, shall not be different from what she saw about her before going to sleep.

During the first hour the pulse generally rises perhaps to 130 per minute; the fœtal heart sounds are not altered in frequency. The temperature also rises to 37·2° C. or 37·8° C. (99° F. or 100° F.), occasionally to 38·3° C. (101° F.).

If the patient has had confidence in assurances we have made to her, she becomes quieter during her pain in ten to fifteen minutes from the first injection. It frequently happens that in twenty to twenty-five minutes she volunteers that her pains now feel like a tight cord around the waist. In thirty-five to forty minutes she is sleeping quietly between pains.

The second injection is given at the end of one hour. The patient may or may not remember this afterwards; generally she does not.

During the second hour she sleeps between pains, groaning slightly or writhing during the pains and perhaps muttering incoherences.

The third injection is due at the end of the hour, but if the patient is sufficiently sleepy and muddled, it may be delayed for half an hour longer. After the third injection has been given, the patient generally becomes heavily narcosed and even severe pains do not disturb her.

These three injections are generally sufficient as a course for a small woman. However, the depth of narcosis is determined more by experience of a woman's behaviour than by any fixed rule. I abandoned memory tests a long time ago, as I found that very often they produced outcrops of memory afterwards and actually after experience of a few cases it becomes a simple matter to gauge the depth of narcosis. If necessary, at the end of the third hour the fourth injection is given.

During these four hours the patient has lain on a bed next a wall and protected on the other side by chairs to prevent possible rolling out of bed. Should it be necessary to turn her, no attempt at forcible moving must be made. This would probably rouse her, even make her obstinate and endanger the success of the narcosis. The only way to manage or move her is to remove a plug from the ear and in a quiet monotonous voice ask her to take up the position required. She always obeys at once and has no remembrance of it afterwards. Here I would emphasize the need for kindness, gentleness and tact in dealing with these patients. Properly handled, they are quiet and obedient; improperly handled, they become obstinate and even fractious.

In my last one hundred and forty-seven cases I have had only four in which the patients were "maniacal" and this state consisted only in restlessness and thirst, walking around the room in search of a drink. Each of these patients returned to bed quietly after being given a drink. This will emphasize the necessity of keeping "Lysol" and all lotions out of sight and reach. It is my practice to offer a drink whenever the patient shows the slightest signs of restlessness.

When narcosis is well established, I generally examine abdominally or *per vaginam* to determine the progress of labour.

In slowly progressing cases a second course becomes necessary. The breath at this stage begins to smell curiously stale; I do not understand this,

but merely record the fact. A catheter is passed and a bowel washout of soap and water is given. Three hundred cubic centimetres (ten ounces) of normal saline solution containing four cubic centimetres (one fluid drachm) of glucose are inserted. The patient perhaps begins to speak less incoherently and gives signs of feeling her pains more. If then we can be reasonably certain that delivery will not come about for four hours, the second course is commenced.

I have had two patients, *primiparæ* about forty years of age, each of whom had been in bed for three weeks previously with high percentages of albuminuria and raised blood pressures; these were eventually delivered after thirty-six hours of narcosis (one of twins); neither patient had the slightest remembrance from the first injection onward.

Narcosis does not prolong labour; my own opinion is that it shortens it. Voluntary muscles of the pelvic walls and floor are relaxed and the uterus contracts without opposition. Forceps deliveries are less frequent because labour proceeds without complaint from the patient. Before delivery I usually give chloroform and ether in order to be sure that no perception of the stronger stimuli of the actual birth may reach consciousness. I have found no increased tendency to *post partum* hæmorrhage in these cases.

When the fundus is well retracted and loss of blood is normal, I give one cubic centimetre "Eruntin" or four cubic centimetres of liquid extract of ergot by mouth. Then I follow with a hypodermic injection of morphine eleven milligrammes (one-sixth of a grain), atropine sulphate 0·32 milligramme (one two-hundredth of a grain) and hyoscine hydrobromide 0·32 milligramme. Without this final dose there is much more likelihood of remembrance of incidents of the third stage. Generally after four to six hours the woman awakens and is surprised to learn that her baby has been born; nearly every mother feels her abdomen to make sure.

On the next day the mother feels unusually well. She has a good colour, good pulse and good appetite and probably states that she feels well enough to get up and go home. On the evening of the second day it is usual to find the temperature raised to 37·8° C. (100° F.) or thereabouts; thereafter it drops.

All attempts on the mother's part to revive memory must be discouraged and any actual dreamy memories she speaks about are more or less ignored. Many patients will have such little outcrops of memory, but provided there is no pain association with them, they do not endanger the success of the case.

The Baby.

At birth the baby behaves as all other babies do. It is not a "blue baby," as the laity and some medical men say it will be. If we have misjudged the duration of labour from our morphine injection it might be sluggish in breathing for a few minutes; but if not and this is the rule, it breathes as quickly and requires artificial respiration no more often than do babies of normal birth.

I have had only one still-birth in any of these cases. I failed to get heart sounds or movements before commencing treatment, but I relied on the mother's assurance of "strong movements." It was a macerated fœtus and it taught me to desist from using narcosis, unless I was reasonably sure of the baby being alive, for every accident of child-birth will surely be credited to "twilight" by the laity. These babies seem to be the most content and to do the best during the fortnight in hospital.

Failures.

My failures in one hundred and forty-seven cases are as follows:

Five *primiparæ* who were treated before feeling any severe labour pains, would each have had successes had they been *multiparæ* and had they known what labour was like. Bad failure occurred with two patients for whom I used preparations of hyoscine other than those of Burroughs Wellcome and Company. A failure occurred with one patient unaffected in any way by two courses. The reason was unknown. Partial successes occurred with six patients who had outcrops of memory with painful associations. This was probably due to insufficient dosage or errors of technique in management. One patient had a severe and immediate reaction to morphine and worried me for an hour or two; she developed a widespread urticaria, running pulse and high temperature; nevertheless, I continued the course of hyoscine and she was none the worse afterwards.

One patient developed an intense urticaria one week later and nothing relieved this but morphine and adrenalin. One week after this injection of morphine she manifested her symptoms again so that I think she reacted to the morphine.

Conclusion.

Opposition to narcosis in child-birth will be overcome some day, but until more attention is paid to the details of management in these cases, medical practitioners will continue to form poor or at best mixed opinions of its usefulness as a method of arriving at painless child-birth.

Success can be achieved only at the cost of much time and care in every case.

Reports of Cases.

PERNICIOUS ANÆMIA OR SPRUE.[1]

By S. O. COWEN, M.D. (Melb.),

Physician to Out-Patients, Melbourne Hospital; Lecturer in Therapeutics, The University of Melbourne.

THE similarity between pernicious anæmia and sprue which has recently attracted much attention, is illustrated by the case here described.

[1] The patient was exhibited at a meeting of the Melbourne Hospital Clinical Society.

Case Report.

Mrs. M., aged sixty-five years, was admitted to the Melbourne Hospital on March 23, 1926. Her chief complaint was of digestive disturbance; for many years she had suffered from constipation, anorexia and dyspepsia. For six months her tongue had been sore, especially when she took hot or spiced food and on several occasions had been ulcerated. A week before admission diarrhœa and vomiting commenced. She attributed these symptoms to food poisoning. The vomiting ceased after two days, but the diarrhœa persisted, the stools being frequent, watery and of brownish colour. She had lost about 12·6 kilograms (two stone) in weight during the previous twelve months.

On admission she was found to be emaciated; her complexion was sallow, but there was no suggestion of jaundice in the colour of her conjunctivæ or skin. Physical examination revealed signs of general pulmonary fibrosis. There was a severe glossitis, the mucous membrane of the tongue being inflamed and smooth, with many prominent engorged papillæ about the tip but no fissures or ulcers. No enlargement of the liver or spleen nor any other abnormality was detected.

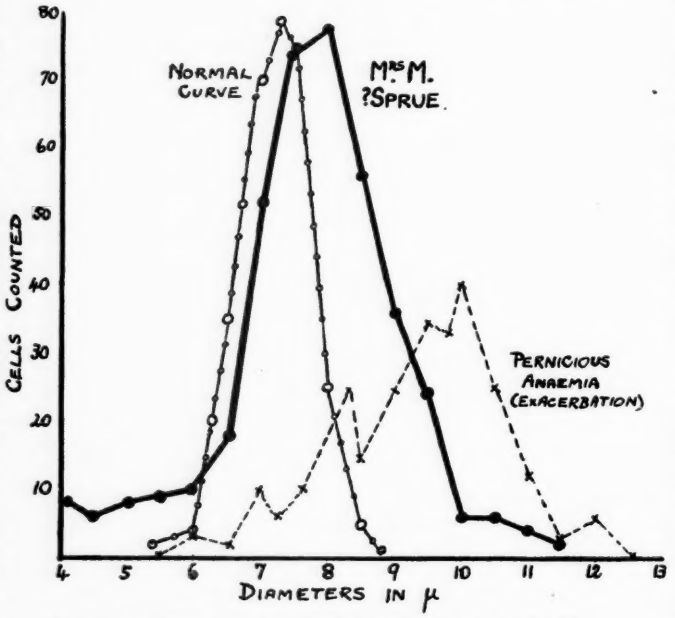
The results of the special investigations were as follows:

X ray examination of the lungs: Some general pulmonary fibrosis without evidence of recent activity.

Opaque meal: Some dyschezia, otherwise no abnormality found.

Fractional test meal: Free hydrochloric acid absent, total acidity low.

Blood count: Red blood cells, 1,810,000 per cubic millimetre; hæmoglobin value, 36% (corrected Sahli); colour index, 1·0; white blood cells, 4,900 per cubic millimetre; film, considerable irregularity in the size of red cells; only a few misshapen cells and none of very large size; occasional polychromasia; no nucleated red cells were seen. White cells were normal. Measurement of the red blood corpuscles by the Price-Jones method showed an increase in the average diameter (see accompanying figure).



Price-Jones Curve from Dr. Cowen's patient, contrasted with a normal curve and one from a patient suffering from pernicious anæmia.

The patient remained in hospital seven weeks. During this time she had one ulcer of the tongue, superficial and about three millimetres (an eighth of an inch) in diameter and a similar but larger one on the inner surface of the lower lip. Her temperature was subnormal throughout. Under treatment with appropriate dietetic measures, Blaud's pill and dilute hydrochloric acid in 1·2 mil (twenty minim) doses, her general condition improved and she gained 6·3 kilograms (one stone) in weight and the diarrhœa became less frequent, but did not cease. A diagnosis of pernicious anæmia was made on April 14 and she was transferred to the Caulfield Convalescent Hospital where similar treatment was continued.

She was transferred to the Out-Patient Department of the Melbourne Hospital on May 15, 1926. The diarrhœa still continued and her general condition was not improving. After closer inquiry into her history the following additional facts were elicited: She had lived in India for fourteen years up till the time of her arrival in Australia twelve years ago, but had not suffered from any tropical disease. For some years before her admission to hospital her diet had been deficient in amount and variety. Restrictions, self-imposed owing to her dyspepsia, deprived her of fresh fruit and vegetables and she took milk and butter only in small quantities. For three months she had been in straitened circumstances and had subsisted almost wholly on white bread and tea made with condensed milk; she had had butter only occasionally and meat, bought ready cooked, at rare intervals. This comprised the whole of her diet.

The blood picture has remained almost identical with that already detailed. The Van den Bergh test gave a delayed reaction, 1·6 units of bilirubin being present. The Wassermann test applied to the blood serum gave no reaction.

Her present condition is: The tongue is in the same condition as on her first admission to hospital, the diarrhœa continues and her general health is far from good.

Commentary.

Without entering into a discussion of the distinction between primary (so-called) and secondary anæmia it may be admitted that this patient is suffering from an anæmia of the pernicious type. On reviewing the evidence, however, the diagnosis of pernicious anæmia is not beyond question and the history suggests the possibility of vitamin deficiency as an ætiological factor or even of sprue. The main points of similarity and difference between pernicious anæmia and sprue, as illustrated by the case under discussion, will be briefly indicated.

Ætiology.

The geographical distribution of these two diseases affords the most important point of distinction between them. Pernicious anæmia occurs in every latitude. Sprue, according to Manson-Bahr,[1] is acquired only in tropical or subtropical countries, but a long period of latency is often observed, the symptoms appearing at any time up to twenty-five years after the patient has left an area in which the disease is endemic. Musser[2] and others state that sprue is occasionally encountered in patients who have always lived in warm, temperate climates.

Elders[3] maintains that sprue and pernicious anæmia are both deficiency diseases and adduces clinical evidence which is suggestive but far from convincing. His thesis is supported in a general way by McCarrison's[4] findings that prolonged vitamin starvation causes atrophy of the intestinal wall and diminished secretion of digestive ferments. The point is of interest in this case, because the onset of symptoms followed a period in which the diet was undoubtedly deficient in vitamins. The general consensus of opinion is that such deficiency may predispose to sprue, but is not the definitive cause, while it has no causal relationship to pernicious anæmia. The *Monilia psilosis* which Ashford claims as the long-sought infective agent in sprue has recently been isolated by Wood[5] from the tongue and fæces of fifteen patients with pernicious anæmia, but the significance of the occurrence of this yeast in both diseases is debatable.

Clinical Features.

There is nothing distinctive in the course of these two diseases; in both remissions occur, but they are more frequent and more closely spaced in pernicious anæmia. Soreness and ulceration of the mucous membrane of the tongue and cheecks are common to both. Loss of weight is generally much greater in sprue than in pernicious anæmia, but it is not sufficiently constant to be of value from a diagnostic point of view. Degenerative changes in the spinal cord which are so common in pernicious anæmia, occur only very occasionally in sprue.[6] The early morning diarrhœa with the classical pale, sour-smelling stools is the most striking clinical feature of sprue. Ashford[7] however states that in only 19% of his cases were the bowel symptoms typical. Diarrhœa occurs frequently in pernicious anæmia and often yields to treatment with dilute acids. The longer duration of sprue and its favourable response to dietetic treatment is perhaps the most important point of distinction.

Blood Findings.

There is general agreement that the blood findings are often identical. In both diseases a macrocytic anæmia occurs.[8] The Price-Jones curve in sprue resembles that found during the periods of remission in pernicious anæmia; during exacerbations of the latter it is wider and more irregular. For purposes of comparison the normal curve and one from a typical case of pernicious anæmia are shown with that obtained from this patient's blood. There is insufficient evidence to provide a comparison of the changes in the bone-marrow.

Evidences of Hæmolysis.

Except during periods of good remission excess of bilirubin can always be demonstrated by means of the Van den Bergh test in the plasma of patients suffering from pernicious anæmia.[9] No satisfactory quantitative results of the test in sprue have been published, but the findings of Wood[10] and Newham and Morris[11] suggest that bilirubin occurs in slightly increased amount. Generally, however, the jaundice is less marked in sprue; the complexion is muddy rather than lemon-yellow and no icteric tint of the conjunctivæ is seen. Fever which may be attributed to the products of excessive hæmolysis, is invariably present at some time in pernicious anæmia, but I am uncertain of its occurrence in sprue. Enlargement of the spleen is common, in fact usual, in pernicious anæmia; the size of the organ is diminished in sprue.

This aspect of the case under discussion suggests the diagnosis of sprue. I have not before encountered a case of pernicious anæmia with a red count of under two million in which there was no fever and a bilirubin figure of less than two units.

Achlorhydria.

Absence of free hydrochloric acid is invariable in pernicious anæmia. In the earlier stages of sprue gastric analysis may show normal, decreased or increased amounts of acid, but in the later stages achlorhydria is commonly found.

Conclusion.

It must not be inferred that diagnosis between these two diseases is always a matter of difficulty. Typical cases of either are easily distinguished, but there is a group which stands almost midway between the two types. The case under discussion exemplifies this intermediate group and until the course and response to treatment are further observed it cannot, I think, be labelled either pernicious anæmia or sprue. It is possible that we are attempting to make a distinction where no difference exists, since some authorities contend that these diseases are simply variants of the same pathological process and that their diagnosis is largely a matter of geography. Be that as it may, their relationship deserves further investigation inasmuch as closer scrutiny may throw light on the baffling problems of their ætiology.

Acknowledgment.

The Price-Jones curve was worked out for me in this and many other cases by Dr. E. L. Cooper, Resident Pathologist to the Hospital.

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Reviews.

ELECTROLOGY AND RADIOLOGY FOR THE GENERAL PRACTITIONER.

THERE is need for an authoritative work on electrology and radiology which shall deal with the subjects from the point of view of the general practitioner, enabling him to understand what class of assistance and how much he may obtain from these branches in the diagnosis and treatment of his patients.

Dr. J. R. Riddell's "Handbook of Electricity and Radiology" makes a not unsuccessful attempt to fill this need.[1] Small and compact, it covers the field of electrology in a very general way without technical details in some fifty pages, making no extravagant claims and mentioning only those conditions in which definite assistance in diagnosis or treatment may be given.

On the question of *tic douloureux* he is over pessimistic. The use of the galvanic current in intense doses (after Dr. Turrell) very seldom fails to give relief.

The use of X rays in diagnosis is dealt with in some one hundred and twenty pages. Most of the ground is covered in a manner which will yield the general practitioner sufficient information to enable him to appreciate the technical difficulties which sometimes prevent the radiologist's report being as detailed as he would desire. This portion of the book is copiously illustrated with reproductions of plates depicting some of the more interesting common conditions.

It is unfortunate that films are not reproduced satisfactorily in the majority of medical journals. This book is certainly below the standard which is now expected.

Treatment by X rays, radium and light is briefly dealt with and the opinions expressed are on the whole very judicious. Exception must be taken, however, to the statement on page sixty-three that the epilation dose is also called the erythema dose; the usual relationship between these is that the former is about 80% of the latter.

THE JOTTINGS OF A GENERAL PRACTITIONER.

IT is a pity that more general practitioners with an extensive knowledge of the world and practice do not sometimes sit down and record their impressions as Dr. Mary C. de Garis has done.[2]

[1] "Handbook of Medical Electricity and Radiology," by James Riddell, F.R.F.P.S.; 1926. Edinburgh: E. and S. Livingstone. Crown 8vo., pp. 254, illustrated. Price: 8s. 6d. net.

[2] "Clinical Notes and Deductions of a Peripatetic, Being Fads and Fancies of a General Practitioner," by Mary C. de Garis, M.D., B.S. (Melbourne); 1926. London: Baillière, Tindall and Cox. Crown 8vo., pp. 192. Price: 7s. 6d. net.

Some no doubt would make a sad business of it, others would afford much profit to their fellows and even the worst could not fail to have a few grains of corn among the chaff. Dr. de Garis's chaff contains more than a few grains; with much her fellows may disagree, but let her remember that disagreement is often a compliment and it is no small matter to arouse in the present tolerant and complaisant generation anything so positive as a disagreement.

Much of what she has to say about labour is very true; we have grown so accustomed to the great pains and danger of child-birth that there is little zeal to diminish them.

So it is that a general practitioner in a country town has been conducting painless and safe labours almost unnoticed or even sneered at by the teachers of the younger generation. She would go still further back and look for the actual first causes of painful, that is pathological labour. She quotes case after case to show how little is actually known of these causes. Unfortunately she has little to say concerning the treatment of pain as an actual present problem. The morphine-scopolamine-gas-oxygen combination is not mentioned.

The author is probably right too in her insistence on the value of the vitamins in life, being perhaps driven thereto by her experience of back country practice. For there is nothing which strikes the outside observer as so deplorable, as the lack of fresh vegetables and fruit in the "outback" parts of Australia. The dietary of the general run of folk in districts away from the coast lacks butter, milk, eggs, vegetables and fruit and it is to this that chest specialists are sending their consumptive patients!

There is too a chapter on a disease or symptom which in tropical and subtropical Australia at least is beginning to receive much attention, although the authors of textbooks and lecturers are saying little; this disease or symptom is pyelitis, chronic and intermittently acute. It can be safely said that at present little is known of its causation, the colon bacillus is blamed by many, the streptococcus by others. Dr. de Garis considers that the organisms, whatever they may be, gain entrance by some septic focus (teeth are her especial culprits), reach the blood stream and are excreted by the kidney, so infecting the pelvis. This is a tempting view, but it is a little shaken by recent work by Helmholz and others. Meantime treatment is a very grave problem and one which is little helped by the various urinary antiseptics now upon the market.

It must be confessed that some of Dr. de Garis's case reports are very far from convincing as showing a causative relationship between dental sepsis and many other diseases, for example neurasthenia. Anyone who has seen many patients suffering from functional nervous disease, will be only too well aware of the disconcerting cures and failures under all sorts of conditions. Nowhere is the distinction between *post* and *propter* more difficult than in nervous disease and in renal disease.

There is a very sound chapter on the doctor's bag; curiously enough no mention is made of the "convulsion outfit" which should find a place ready for use in every practitioner's bag, nor does the author mention adrenalin for the emergency asthmatic.

Her article on research into maternal and infantile mortality is well worth reading, written as it is from the standpoint of a country doctor.

A chapter on her experiences in the Scottish Women's Hospital in Macedonia will recall to many now in quiet practice the days when they were part of a great army and medicine was part of a great adventure.

SURGERY FOR NURSES.

"PRINCIPLES OF SURGERY FOR NURSES," according to the author, Dr. M. S. Woolf, is a book written to meet the demands of nurses for a simple statement and explanation of surgical affections.[1]

Particular use has been made of works by W. W. Keen, Rose and Carless, Bowlby and Andrewes *et cetera*.

Dr. Woolf says, in the introduction to his book, that nurses have lost interest many times because they have not known the basic form of surgical diseases or the well established methods of treating them. If this is true, it surely is a reflection on the medical practitioner. It is at the bedside that the surgical principles on which treatment is based, can be best taught.

It may be mentioned that there are many handbooks on surgical nursing (and among them an excellent Australian book) that contain all the principles of surgery that nurses need to know.

This work can be recommended to those who think there is a need for a work on principles of surgery for nurses.

PROCTOLOGY FOR THE GENERAL PRACTITIONER.

DR. L. J. HIRSCHMAN in the preface to his book on diseases of the rectum states that he presents this book to that great mass of the profession who were, like himself, unfortunate in getting little training during their student days in the special field of proctology.[1] Only those conditions which are amenable to treatment of a minor order are discussed. For major operative work the reader is referred to complete works on proctology.

He devotes one chapter to those symptoms which should call attention to the rectum, and thirty excellent pages to the technique of the examination of the patient. He stresses the value of local anæsthesia, but clearly demarcates its limitations. Sacral anæsthesia is described in detail.

The chapter upon constipation affords instructive reading. The author advocates the use of a special inflating bag on the end of a hollow bougie for massage, finding that a short course carried out by the medical practitioner will restrain the rectum and lower sigmoid to contract and thus bring about a permanent cure without the use of purgatives. Fistulæ, abscesses, hæmorrhoids, fissures and ulcers are well discussed, but a prominent chapter in the book is the one on dysentery.

To those whose practice entails occasional treatment of patients suffering from rectal conditions this book will bring much pleasure in the reading.

A MANUAL ON ORTHOPÆDIC SURGERY.

"ORTHOPÆDIC SURGERY," by W. A. Cochrane, is a short compendium of the principles of modern orthopædics and also contains a surprising amount of actual detail.[2] The book commences with a large section dealing with the principles of correct human posture as laid down by Goldthwait and the reconstruction of patients suffering from chronic conditions. This section, the author explains, is dealt with at length to emphasize the importance of regarding the patient as a whole in dealing with any local orthopædic problem.

The rest of the book is arranged according to regions of the body and the conditions affecting each region, whether they be congenital or acquired deformity or disease of bone or joint. This arrangement is extremely useful to the student or general practitioner who wishes to obtain a general idea of the subject without having to digest long chapters on the pathology of general diseases of bones and joints. The author presumes that such knowledge has already been acquired elsewhere.

The work may be regarded as a very useful and practical treatise suitable for the use of medical students or general practitioners desiring a general introduction to orthopædic surgery. It is profusely and well illustrated both by photographs and sketches.

[1] "Principles of Surgery for Nurses," by M. S. Woolf, M.A., B.Sc., M.R.C.S. (England), L.R.C.P. (London); 1925. Philadelphia and London: W. B. Saunders Company. Demy 8vo., pp. 350. Price: 15s.

[1] "Handbook of Diseases of the Rectum," by Louis J. Hirschman, M.D., F.A.C.S.; Fourth Edition, Revised and Rewritten; 1926. St. Louis: The C. V. Mosby Company. Royal 8vo., pp. 402, with illustrations. Price: $6.50 net.

[2] "Orthopædic Surgery," by W. A. Cochrane, M.B., Ch.B., F.R.C.S.E.; Edinburgh: E. and S. Livingstone. Demy 8vo., pp. 551, illustrated. Price: 21s. net.

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The Responsibilities of the State.

IN the review for 1925 of the Rockefeller Foundation Dr. George E. Vincent, the President of the Foundation, raises the question "as to the place of privately endowed foundations in the social order and their relation to the work of governments." He deals with the activities of his own organization and in consequence widens the question to include the relationship between the Rockefeller Foundation and governments of foreign countries as well as of his own country. He points out that in but few activities do the private funds come into direct relations with the tasks of governments. The Rockefeller Foundation in 1925 expended nearly $9,114,000 in connexion with the work of the International Health Board, the China Medical Board, the Division of Medical Education and the Division of Studies. He states his case in the following terms. "Aid to a State-supported university may raise questions of principle and policy. Inquiry into the methods of government is quite obviously a matter of some delicacy. Any attempt by endowed agencies to influence public opinion or to secure specific legislation is likely to be resented. Efforts to substitute voluntary for government machinery are pretty sure to make trouble. This applies especially to the task of protecting a community against disease. For this the government must assume primary responsibility. Its power to tax and to command obedience is essential." The policy of the various divisions of the Rockefeller Foundation has always been to stimulate governments to introduce measures for the improvement of the health of the community, to aid them by providing expert workers, by bearing part of the expense of the work in its early stages and by advice and to withdraw as soon as the success of the innovation is assured. One of the conditions of the offer of the Foundation to lend its aid is that the consenting government undertakes to continue the work after the period of initiation.

Australia has benefited by this extraordinary scheme in the past and is now reaping where the workers of the International Health Board sowed. Have Australians realized the significance of the aid that was lent to the country but a few years ago? The story of John D. Rockefeller cannot be repeated too often. A man of immense wealth recognized that money gained in all parts of the world must be returned to the countries from whence it came for the benefit of mankind. He conceived the idea of instituting an organization whose slogan is "the welfare of mankind throughout the world." He sought the advice of the most competent individuals within reach as to how his millions could be used to the greatest advantage of the world's citizens. Unlike many other rich men he did not seek a channel for unloading his wealth that would bring him monuments or public edifices to remind his compatriots of his financial success in life. John D. Rockefeller elected to spend his wealth in an endeavour to make the people in all countries healthier and happier. The endowments of the Rockefeller Foundation have increased during the course of but a few years to over thirty-six million pounds sterling and as mentioned above the Foundation spent last year a sum approaching two million pounds sterling. The organization of the several divisions of the Foundation is immense and a small army of highly trained workers is engaged to render the organization effective. It is not claimed that all Rockefeller Foundation work is of the best quality, but it is all good. Moreover, it is international. There are three fellowships held in Australia at the present time.

Australia has no John D. Rockefellers, but it has many men rich enough to emulate his example. The responsibility for the control of disease belongs to the State, but it should not be forgotten that the State is merely a term for a community of individuals regarded collectively. When a man of one nation offers to assist people in other countries, he takes care, if he be wise, not to exercise influence in political circles. But when a man is prepared to help his own kith and kin, the question of political interference does not arise. A government is sup-

posed to act for the benefit of the people according to the tenets of the party that secured a majority. The responsibility of the government therefore resolves itself into a realization of the duty of doing what is believed to be the best for the welfare of the community. In the matter of preventing disease and of maintaining healthy conditions the views of political parties should not be permitted to enter. The efficiency of a nation depends on the standard of the health of the mass of the people. If this can be raised by the adoption of hygienic measures, no government is justified in refusing to provide the necessary money. In other words health is cheaply bought at any price. It is true that caution must be exercised, lest the preventive measures involve so great an encroachment of the liberty of the subject as to render them baneful rather than beneficial. This danger can be averted if the measures are based on sound, scientific principles. It therefore follows that in every scheme of preventive medicine research and improvement of education must be given a prime place. They are to be found in the programme of the Rockefeller Foundation. And they should be encouraged by rich Australians who adopt the Rockefeller thesis that accumulated wealth should be spent for the welfare of the community. It is eminently advisable to remove research from the control of governments. A research worker does good work if unfettered by regulations and undisturbed by departmental control. Australia needs a research council endowed by private funds.

Current Comment.

GONORRHŒA IN THE FEMALE.

THERE is a clause in the several acts dealing with venereal diseases in the Commonwealth requiring every person who is suffering from a venereal disease, to submit himself to treatment at the hands of a registered medical practitioner until he receives a certificate of cure. The question of the standard of cure has been raised on many occasions. If this legislation is to prove of material benefit to the community, treatment of infected persons must be continued until all risk of infection has been removed. If a person is freed from objective signs and subjective symptoms of gonorrhœa by treatment and yet harbours gonococci in the depths of the genital mucosa, he or she may become a source of danger as soon as some mechanical or biological injury drives the entrenched cocci from their hiding places on to the surface of the mucous membrane. It therefore follows that the prophylactic value of the compulsory treatment will depend among other things on the interpretation of the word cure. Symptomatic cure is of little value. The cure must be complete and real. It must connote the destruction or expulsion of every living gonococcus within the body. The value of the expedient of compulsory treatment of every infected person as a prophylactic measure is unassailable, but in this connexion again much depends on the accurate interpretation of the term every. The occurrence of a latent or symptomless infection in a prostitute may lead to serious consequences unless such an infection be detected and treated. That the diagnosis may be extremely difficult will be admitted by all experienced practitioners. But if the infected person is unaware of her infection, the opportunity to make a diagnosis may be withheld. In theory it should be possible to trace all manifest infections in both men and women. In practice the vigilance officer will experience insurmountable obstacles to his efforts to discover every infection. In spite of the anonymity of the primary notification persons other than prostitutes exercise cunning in their determination to evade detection. The prophylactic value of compulsory treatment thus seems to be endangered by three important factors in addition to numerous minor ones. There is the wilful evasion of the injunction to undergo treatment until a cure has been effected; there is the difficulty in recognizing a mild or symptomless infection; lastly there is the further technical difficulty in distinguishing between an apparent and a real cure.

The importance of these matters need scarcely be explained. In the year 1924 the number of gonorrhœal infections notified in the five States of Australia in which the legislation is in force, was 11,220. From the available figures it appears that in New South Wales, Victoria, Western Australia and Tasmania there were notified 8,941 infections in males to 817 infections in females. The last figure includes 54 in girls under ten years of age. The figures indicate that in the four States named there were eleven males infected with gonorrhœa to each woman similarly infected. In New South Wales the proportion was one woman to nine men, in Victoria one woman to seventeen men, in Western Australia one woman to nine men and in Tasmania one woman to four men. It requires much credulity to accept these figures. Rather would we be inclined to the opinion that evasion is more common among women than among men. But even if these unconvincing figures be accepted, the frequency of gonorrhœal infections in one year is disquietingly high. Among every hundred thousand Australian citizens no less than two hundred and thirteen were known to have been infected in 1924.

Professor C. Bucura has recently called attention to the fact that not infrequently gonorrhœa causes little or no discomfort in the female.[1] In males the acute attack cannot be overlooked. The signs

[1] *Wiener Medizinische Wochenschrift*, October 2 and 9, 1926.

and symptoms are definite and the local and general disturbance is considerable. In women the onset may be so mild that it would be misleading to speak of an acute attack. In Professor Bucura's experience young married women with non-venereal, harmless vaginal discharges at times acquire a gonorrhœal infection from their husbands without any visible change in the nature of the leucorrhœa. Many women who are found to be suffering from chronic gonorrhœa, are quite unaware that they have been infected; the onset caused no remarkable symptoms. He has evidence of the existence of a latent infection in a woman, although he admits that this is somewhat rare. The patient has no symptoms at all. Ordinary examination failed to reveal any departure from a normal healthy condition of the genital passages. This woman's husband was suffering from an acute gonorrhœa. Gonococci were discovered in the mucous membrane of her genital canal for a day or two after each coitus with her husband, but then disappeared without any manifestations of an infection. Less uncommon than this form of tolerance to cocci are chronic infections without noticeable signs or symptoms. The infection is detected only after the secretion of the cervical canal is examined. Professor Bucura records two instances of undoubted infection of female infants at birth which was not discovered at the time. The patients had no obvious disturbances during childhood, although one of them had an inflammatory affection of the eyes in infancy. They infected their husbands immediately after marriage, but even then gonococci were discovered in the cervical mucosa only after prolonged and careful search. He multiplies instances of infections in women which were productive of little or no disturbance of health and which were accompanied by such slight local signs that the condition deserves to be regarded as symptomless. These infections bear a striking resemblance to the condition spoken of as the carrier state. The women are undoubtedly gonococci carriers, for they harbour living, virulent gonococci without manifesting symptoms. Intercourse with these women results in an acute gonorrhœal infection in the male partner. The gonococci are usually embedder in the deeper layers of the cervical mucosa. The examination of the secretion must be painstaking and thorough, if the cocci are to be discovered. Very rarely the cocci have found a resting place within the cavity of the uterus. They may seek protection within the orifices of the vulvar glands. It is uncommon for gonococci to form chronic foci in the female urethra.

The recognition of the facts that women may be carriers of gonococci and that with skill and diligence every latent infection can be disclosed, renders the prophylaxis of gonorrhœa less hopeless than it would seem to be. The main difficulty of the problem is that these women who represent the most dangerous sources of infection, do not readily seek the assistance of the medical practitioner. If they are unaware of their infection, chance alone will induce them to consult a doctor. If they know that they are infected, but suffer little or no inconvenience from the infection, they may deliberately avoid an examination. But sooner or later almost every individual has some real or imagined symptoms for the relief of which they will apply to their doctor. The opportunity must be seized. It may involve the expenditure of considerable energy and the sacrifice of much time. A keen cross-examination and an intelligent sifting of the scraps of evidence should arose the suspicion. Once the suspicion of the practitioner has been awakened, no effort should be spared in arriving at a definite conclusion. Many authorities, among whom Professor Bucura ranges himself, hold the opinion that gonococcal vaccine used with discrimination and intelligence will dislodge all gonococci from their lairs. It is easier to discover the cocci when they are resting on the surface of the mucous membrane than when they are entrenched in deep situations. The manœuvres necessary to remove some of the surface contaminating organisms and secondary invaders help in the mobilization of the gonococci. The duty of the practitioner is to make an accurate diagnosis in every instance and once an infection has been revealed, he must be prepared to control his treatment by bacteriological means until he has definite evidence that all the cocci have been killed or removed.

THE BULLETIN OF HYGIENE.

THE Honorary Managing Committee of the Bureau of Hygiene and Tropical Disease has recently performed a service to the world of hygiene which calls for special mention. The literature of every branch of medical science has increased to such an extent during the past twenty years that the earnest student experiences difficulty in keeping himself informed on the advances in any particular subject. The scope of hygiene is extremely wide and much of the literature is scattered in general periodicals. The Bureau of Hygiene and Tropical Diseases started a journal under the title of *Bulletin of Hygiene* in January of this year. It takes the form of a survey of the current literature of all the subdivisions of hygiene from bacteriology to whooping cough. The abstracts are well written and are signed. The authors in practically every instance are recognized authorities on the special subjects. The matter is grouped under various convenient headings. The abstracts are at times illustrated. This publication will be found to be of the greatest use to workers of all classes. To the original investigator it will be of value in saving tedious search through journals and periodicals for records of recent work; to the industrial hygienist it will prove a boon by keeping his knowledge up to date with a minimum of expended energy. The author will find it what he needs when preparing an article for publication on some hygienic subject. Lastly general practitioners will discover that it is a handy library of reference. The subscription is only one guinea a year. Orders should be sent to the Bureau of Hygiene and Tropical Diseases, 23, Endsleigh Gardens, London, W.C.1.

Abstracts from Current Medical Literature.

DERMATOLOGY.

Jadassohn's Disease.

B. B. BEESON (*Archives of Dermatology and Syphilology*, September, 1926) in reporting a further case of *granulosis rubra nasi* or Jadassohn's disease goes exhaustively into the literature on the subject. He mentions the cases that have been reported and gives the views of many of the writers on this condition. The author's patient was a male aged twenty years. The redness of the nose had been present for eight years. There was no abnormality in the personal or family histories. The nose was reddened from the tip to 2·5 centimetres below the glabella and laterally on to the malar bones. Besides a generalized redness there were many telangiectatic blood vessels. Small papules were present over the cartilaginous portion of the nose and there was much sweating of these areas. There were also five small watery cysts around the tip of the nose ranging in size from a pin's head up to a small pea (hydrocystomata). On histo-pathological examination little change of the epidermis was seen, but many of the sweat ducts were dilated and cystic and there was some hypertrophy of the sebaceous glands. The author regards the condition as an example of Brocq's cutaneous reactions. X ray and carbon dioxide snow treatment offers the best results.

Myeloma of the Skin.

J. M. H. MACLEOD (*Proceedings of Royal Society of Medicine*, February, 1926) describes a case of myeloma of the skin. He states that he is unable to find any reference to myeloma of the skin in the literature. There was a slightly raised, blue-black, pigmented patch circular in outline about two centimetres in diameter and situated on the posterior fold of the left axilla. It had been in existence for two years with no history of a previous lesion such as a mole. The appearance suggested a melanotic carcinoma. Microscopically it proved to be a myeloma. The pigment was not melanin but hæmosiderin which gave a Prussian blue reaction with potassium ferrocyanide and hydrochloric acid. The ground substance of the tumour was composed of loose fibrous tissue with newly formed vessels. There were numerous giant cells with no nuclear activity. The giant cells were similar to the osteoclasts of a myeloid sarcoma.

Lichen Planus.

A. WHITFIELD (*Proceedings of Royal Society of Medicine*, February, 1926) reports a case of *lichen planus* of the scalp. He regards the condition as not very well recognized. The writer draws attention to the following characteristics. The lesion is always sharply defined and nearly circular; infiltration is present so that a kind of "tableland" is produced; the hair may be broken from rubbing or somewhat distorted by the abnormal keratosis; if no treatment has been carried out, the surface is covered with small silvery scales which are somewhat adherent; if ointment has been rubbed in the scales are absent and funnel-shaped depressions corresponding to the hair follicles are noticed. There is no atrophy and there are no follicular lesions with the spines.

The Ætiology of Impetigo Contagiosa.

A. R. BALMAIN (*The Lancet*, September 4, 1926) makes a contribution to the study of *impetigo contagiosa* to ascertain the nature of the causal organism and to discover a suitable remedy. He asserts that the streptococcus is not the offending organism in such a high proportion of cases as other observers have noted. He says that in the vesicles pure streptococci, pure staphylococci and mixed streptococci and staphylococci were found with equal frequency. By inoculating his own arm the writer demonstrated that a streptococcus or a streptococcus in conjunction with a staphylococcus will produce a typical lesion. As regards treatment the various well known methods are discussed including the application of acriflavine in different form. It was found that 1‰ acriflavine in paraffin emulsion was the best remedy.

Prickly Heat.

H. W. ACTON (*Indian Medical Gazette*, July, 1926) draws attention to the relationship of *lichen tropicus* to a general oiliness of the skin and seborrhœa of the scalp. He states that it occurs in India more frequently among Europeans than among Indians, a fact which he attributes to the lighter texture of the clothing worn by the latter and to the wearing of the shirt inside the trousers by the former. It occurs mostly when the temperature exceeds 32·2° C. (90° F.) and when the humidity is high. *Staphylococcus albus* is recovered from bacteriological scrapings and sometimes *Staphylococcus aureus* with the bottle bacillus of Unna. The typical vesicular lesion is situated underneath the *stratum corneum* in the position of a sweat gland duct. The author considers that the initial changes are due to an infection by the staphylococcus at these sites which became sodden by perspiration and that the staphylococci are derived from an existing seborrhœic site on the body. Its close relationship to seborrhœa is also shown by the fact that it yields readily to sulphur. It is especially important to treat the scalp in these conditions.

The Effect of Ultra-Violet Irradiation on the Health of Infants.

L. H. BARENBERG, J. FREIDMAN and D. GREEN (*The Journal of the American Medical Association*, October 2, 1926) give tabulated results of the treatment of a group of children in a large child-caring institution by ultra-violet light. The treatment was to note whether it had any given prophylactic value against infection and whether there was any increase in the height, weight and hæmoglobin of the subject. Children up to the age of two and a half years were subjected to ultra-violet rays over a period of six months, while a similar number had no irradiation, but were kept under similar conditions as regards food and environment. The results were disappointing. There was some increase of weight at the commencement, which was not maintained. No lessening of the usual winter infections was noted; while an outbreak of pertussis and varicella occurred during the course of the treatment. The hæmoglobin value was not increased until the advent of spring, but the texture of the skin and the muscular tone were definitely improved.

RADIOLOGY.

Actinomycosis and Radium Therapy.

S. A. HEYERDAHL writes on his experience in the treatment of actinomycosis of the face and neck by radium (*British Journal of Radiology*, January, 1926). Twenty-one patients were treated in this series and the diagnosis was confirmed microscopically in all cases. Potassium iodide treatment was abandoned when radium treatment was commenced. Concentrated radium salt was used in platinum tubes containing one, two and five centigrammes of radium salt or in plate applicators (one centigramme of radium salt on a two centimetre square plate). The filter consisted of one to two millimetres of lead and thus the γ rays were used. Two to three radium treatments were given with six week intervals. All patients were cured and good cosmetic results were obtained.

Cholecystography.

W. H. STEWART and E. J. RYAN (*American Journal of Roentgenology*, December, 1925) write on the development of the jejunal or oral methods of administration of the tetraiodophenolphthalein salt of sodium in the examination of the gall bladder. The authors had several bad results when using the bromine salt and had discontinued the method, but when the iodine salt was brought into use, they again took up this branch of work. The authors administered the salt in forty-four cases through a jejunal tube and the gall bladder was clearly defined as is usual in the intravenous method. The gall bladder was most distended four or five hours after the dye was given, but was usually most distinct from the eighth to the twenty-fourth hour. Latterly the authors have given up the jejunal method and have been administering 0·3 gramme (five grain) keratin-coated pills, preferably freshly prepared. A resin-

coated pill has also been used with satisfactory results. The usual dose recommended is too great and the authors have gradually reduced their dosage, so that the average adult of 67·5 kilograms (one hundred and fifty pounds) weight receives only 2·4 grammes (forty grains) of the salt. An enema is given in the morning and a skiagram of the gall bladder is taken. The evening meal is taken at 6.30 and the capsules are given at intervals of fifteen minutes commencing at 9.30 p.m. The patient reports for radiography at 9 a.m. the following day, no food having been taken between 6.30 p.m. and 9 a.m. At 1 p.m. the patient is again examined and food is then taken and a further examination made at 2.30 p.m.. Absence of shadow points to the presence of gall stones. A source of error is a gas-distended hepatic flexure. Deformity of the gall bladder outline is due to adhesions. Failure to fill the gall bladder is due to blockage of the cystic duct by adhesions or by thickening of the mucosa. If jaundice is present with "no shadow," there is probably an intermittent obstruction. The findings are always reliable, if the salt has broken up and is well distributed through the bowel.

Radium in Gynæcology.

F. B. BLOCK (*Archives of Physical Therapy, X-Ray, Radium*, March, 1926) refers to the treatment of uterine pathology by means of radium. In reference to fibroid disease he states that radiotherapy is preferable to operation, unless various contraindications are present. These contraindications are: (i.) Tumour larger than a four months' pregnancy; (ii.) adnexal disease; (iii.) tumours causing pressure symptoms; (iv.) cachexia suggesting necrosis of the tumour; (v.) large submucous tumours; (vi.) rapidly growing tumours; (vii.) patients under thirty-five years of age.

Gastro-Intestinal Infection.

C. EASTMOND (*British Journal of Radiology*, March, 1926) writes on various definite changes in the gastro-intestinal tract apart from the usual ulcer, new growth, appendicitis and gall bladder disease. The author points out various defects in the pyloric antrum generally interpreted as scarring from old ulcer or spasm. Regardless of the number of films taken, this affected area never assumes the normal outline and the condition is really an erosive one (ulcerative gastritis). The antrum often manifests alteration in peristalsis and does not transmit the regular waves showing that the elasticity of the wall is diminished and the condition present is really a "fibrosis" and shows an engorgement externally at laparotomy. Various deformities of the duodenal cap—flattening, elongation, inconstant irregularity—are really due to a fibrosis of the cap wall. In such cases minute barium deposits often occur owing to an "erosive ulceration" as distinguished from the usual duodenal ulcer proper. Adhesions from a periduodenitis are often present and cause cap deformities. Disappearance of the rugæ in the second part of the duodenum points to associated pathological changes in the gall bladder. Sclerotic changes occur in the terminal portion of the ileum and caecum and in the latter organ are usually associated with pathological changes in the appendix. The author also refers to the loss of elasticity in the colon, especially the sigmoid colon, as here the fæcal retention is most noticeable and the chance of bacterial invasion is greater. Diverticulosis may be a late manifestation of this type of chronic infection. Numerous illustrations accompany this paper and portray the different pathological conditions described.

Hypertrichosis.

HOWARD FOX (*American Journal of Roentgenology*, October 1925) refers to the treatment of hypertrichosis by X rays. Theoretically, X rays would appear to be an ideal method of epilation. Experience shows that it is unsafe and damage to the skin is frequent and such treatment is absolutely contraindicated. This is the unanimous opinion of all reputable dermatologists. Recently a firm of advertising quacks has become active in exploiting this form of epilation. These advertisers describe their methods as "safe." Some of these quacks admit using X rays, while others state that they use a new mysterious "wave-length." Many disastrous effects have already been recorded and the list of unfortunate victims is increasing. These results will have a bad effect on the reputation of men practising radiotherapy, even when highly skilled. Evidence is being collected in order to suppress this type of dangerous and undesirable quackery.

Tuberculosis of the Sacro-Iliac Joint.

C. J. MCCULLOUGH (*American Journal of Roentgenology*, February, 1926) discusses tuberculosis of the sacro-iliac joint. No statistics are available concerning the frequency of this condition, but in comparison with tuberculosis of the hip joint and spine it is referred to by authorities as being uncommon or rare. The changes are similar to those seen elsewhere in tuberculosis of joints. It is seldom bilateral and usually begins in the sacrum or ilium, more frequently in the former to which it may have extended from a focus in the lumbo-sacral joint. Usually there is destruction of the joint surfaces with perforation of the capsule and the formation of a "cold abscess." Such an abscess may point in the gluteal region, in the groin or in the ischio-rectal fossa. Pain, aggravated by movement, is early and is localized or referred along the sciatic nerve. Tenderness on pressure is present over the joint, but not along the sciatic nerve. Lateral compression of the pelvis causes pain. Limitation of hip and spinal movements is present. Swelling may appear over the joint, but is not characteristic. X ray examination should be made every two weeks in suspected cases and then the earliest bone changes will be demonstrated.

Artificial Pneumothorax.

R. C. BREWER writes on the value of radiography as an adjunct to artificial pneumothorax (*Archives of Physical Therapy, X-ray, Radium*, January, 1926). Artificial pneumothorax is one of the recognized methods of treating certain forms of pulmonary tuberculosis and lung abscess. Nitrogen was used at first, but now ordinary air is used. Pneumothorax causes immobilization of the lung and gives a tuberculous process an opportunity to heal. If the lung does not collapse after the introduction of air, it may be necessary to use positive pressure to bring about this collapse, but this pressure must not be of high degree. Cavity and abscess contents are expressed when the lung collapses and the cavity has an opportunity to heal. Before inducing pneumothorax, it is necessary to be sure that the other lung is capable of carrying on respiration. The first few weeks should be spent in bed and activities are allowed only when shock and toxæmia have abated. The state of collapse is checked by radiograms. Hydrothorax is accompanied by rise in temperature, fast pulse, cyanosis and air hunger.

"Lipiodol" in Pregnancy.

CARLOS HEUSER (*British Journal of Radiology*, March, 1926) contributes a paper on the use of "Lipiodol" in the diagnosis of pregnancy. The author states that the *fœtus in utero* has been demonstrated by X ray examination from the fourth month by the use of special technique. He also points out the great value of X rays in diagnosing twins, anencephaly and dermoid cysts. Purgatives and an enema are given on the day preceding examination and an opiate is administered on the day of examination. Modern apparatus capable of delivering eighty milliampères of current at one hundred kilovolts is necessary. The vagina is washed out and the cervix painted with iodine and a large cannula is passed into the uterine cavity. One to two cubic centimetres of "Lipiodol" is then injected and a skiagram taken and afterwards if possible another two to five cubic centimetres are injected and a second skiagram is taken. If air is injected int othe bladder (forty to sixty cubic centimetres) a better result is obtained. When "Lipiodol" enters the tubes, the patient's pupils dilate and colic may occur. By this method also it is possible to demonstrate patency of the tubes. No abortions occurred and in fact the author has tried to produce abortion by this procedure (in cases of necessity) but has failed. The presence of a fœtus in the cavity can be detected from the fact that the "Lipiodol" flows round it showing the cavity to be occupied. An unoccupied uterus gives a triangular "Lipiodol" shadow.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, 30-34, Elizabeth Street, Sydney, on October 28, 1926, DR. W. H. CRAGO, the Honorary Treasurer, in the chair.

Arthritis Deformans.

DR. H. C. ADAMS read a paper entitled: "Arthritis Deformans" (see page 753).

DR. J. W. HOETS read a paper entitled: "The Treatment of Arthritis Deformans" (see page 755).

DR. D. J. GLISSAN thanked the speakers for their papers. The subject interested him much and he held that the large number of conditions described as *arthritis deformans* could be divided into two groups. This was important because of the bearing on both ætiology and treatment. It was always confusing to hear the term *arthritis deformans*, because no one knew exactly what the particular speaker meant by the term. This difficulty would always arise until the nomenclature was settled. The subject would be clearer if one type were described as *arthritis deformans* or rheumatoid arthritis and the other as osteoarthritis. The first class comprised chiefly persons of from twenty to thirty-five years of age and in the other class were those over forty-five years of age. In the first class women predominated, they were pale and looked unhealthy. The lesion was generally polyarticular and quite often a so-called focus of infection was found. The second type of condition, the osteartritic form, occurred in older persons and Dr. Glissan could not believe that focal infection had anything to do with the ætiology. The patients were generally in robust health, they were very frequently males who had suffered from some trauma either as a result of accident or of their occupation. It was seldom that more than one or two joints were involved. The clinical picture in the two types was different and the pathological changes were different. The osteoarthritic condition could be described for want of a better word as a metabolic change due to a lack of balance between the metabolism and katabolism of the joint. It should be remembered that a joint was a piece of mechanical apparatus similar to a hinge on a door. The blood supply of an organ was dependent on the condition of the vessel walls and it was quite feasible that changes would be manifest first in places that were subject to wear and tear. Not a great deal was known about the minute blood supply of bone, it was a subject that would well repay investigation.

In the treatment of arthritic conditions the term cure was often used. Cure might be defined as a complete restoration of function. All the surgeon did as a rule was to relieve symptoms. Cure in the sense of restoration to normality was impossible. In the treatment of a painful osteoarthritis it was absurd to begin by pulling out teeth without doing anything to relieve the condition of the joint. Dr. Hoets had put the case ably for splinting in the early stages. With this Dr. Glissan concurred, but he believed that in the late stages radical surgical treatment should be undertaken. By this he did not necessarily mean a cutting operation. Very often, as in an osteoarthritis of the hip joint the limb could be put into a suitable position and retained there first of all by plaster and later by a leather splint. He had done this in old people without regard to the question of focal sepsis and he had obtained good results. Dr. Glissan then discussed arthrodesis of the knee joint and pointed out the many advantages which resulted from this procedure. He also referred to synovectomy. In this operation all that the surgeon did was to set up a healthy reaction. The diseased synovium was removed and healthy tissue was exposed. If suitable after treatment was adopted, useful movement and freedom from pain could be obtained. A good deal of confusion had arisen in regard to the term ankylosis. In the rheumatoid arthritic type ankylosis occurred. In the osteoarthritic type ankylosis did not occur. No bony or even fibrous union occurred. The shape of the joint surfaces was a potent cause of the limitation of movement in many cases. Dr. Glissan illustrated his remarks by handing round the head of a femur which was the seat of osteoarthritic change.

DR. LENNOX G. TEECE said that both speakers had given food for thought. He had understood Dr. Hoets to say that active movement was more valuable than massage or passive movement. If he had said that passive movement was not indicated at all in the treatment of these joint conditions, Dr. Teece would be in full agreement with him. Dr. Teece had not seen benefit result from passive movement in a single instance. The more these joints were moved, the stiffer they became. If a joint with a slight range of movement were immobilized on a splint, it would be found that on removal of the splint the range of movement would be greater. The joints in these conditions were diseased and needed rest just as much as did a tuberculous joint. It was all part of one broad principle. Many years ago it had been the practice to move tuberculous joints and it was quite probable that the time would come when the moving of joints which were the seat of arthritic changes would be regarded with horror except when they were moved once only in order to place them in a more favourable position for future function. Thus it was justifiable to move a flexed and adducted hip to a position of extension and abduction in the hope that it would remain there for future weight bearing. The essential necessity for rest was borne out by the difficulty in treating the different joints of the lower extremity. The mechanical difficulty governed the prognosis. The tarsus was the most difficult of all to treat because it was impossible to obtain movement without weight bearing.

Dr. Hoets had spoken of correction of deformity of the knee by tetonomy of the ham strings if splinting had not been successful. The flexion could very often be corrected by the application of plaster. If the deformity did not yield readily to these methods, it would be necessary to go much further than tenotomy of the ham strings. Tenotomy would produce little or no improvement and the whole of the posterior capsule of the knee joint would have to be divided transversely. He agreed with Dr. Glissan in regard to the favourable results of arthrodesis of the hip. He had found that patients stood the operation and the subsequent immobilization well, provided that they were not overburdened by fat. Treatment was much more difficult in hospital than in private patients. It was very often impossible to deal with the unfortunate people who came to an out-patient department. If dietetic treatment were necessary, the men would still go on taking beer and meat and the women tea and bread and butter.

In conclusion Dr. Teece referred to Strumpel-Marie's disease. This was not regarded as infective. It attacked young men between the ages of sixteen and twenty-five and caused progressive ankylosis of the vertebræ and the large joints in other parts of the body were frequently involved. In the final stages of the disease the patient was as though turned into a block of stone. He could be stood upright, but had to be propped up. This condition was worth attacking surgically, for even if the patient could be so improved that he was able to walk even a hundred yards with the aid of crutches, life was a different thing to him.

DR. E. B. M. VANCE said that the importance of the subject was manifest when the invalid pension returns for the Commonwealth were studied. These joint conditions constituted the greatest cause of crippling in Australia. Of twenty-three thousand pensions four thousand were being paid for so-called rheumatism. There was urgent need for a campaign to lessen crippling from this cause. There seemed to be a doubt in the minds of some as to the need for rest. In his opinion rest was all important. He was disappointed that Dr. Hoets had not discussed in more detail the methods of procuring rest. In resting a joint the surrounding muscles should also be put at rest. A joint was dominated by muscles and existed in order to subserve the function of muscles. Better results would be obtained if the joint were rested properly in this manner than if it were regarded merely as a joint *per se*. It was often necessary to rest the joint by

the application of extension. It was a great reproach to the medical profession that there were so many hopeless cripples from preventible deformities.

DR. RICHARD FLYNN said that orthopædic surgeons were interested only in end results. He thought that what was required was light on the disease process. The interesting stage was the early stage, when possibly a focus of infection was present without any joint changes. He referred to work which he had seen carried out in regard to gall bladder infection in this condition. The important point was early diagnosis.

In conclusion Dr. Flynn said that he had little faith in the efficacy of vaccine treatment.

DR. S. U. GENTILE asked what treatment should be adopted for a patient whose right knee was stiff, painful and flexed and whose left knee was extended and painless.

Dr. Adams in reply said that as far as tonsils were concerned the trouble was frequently caused by small buried tonsils rather than by large tonsils with much exudation. If the tonsils could not be removed, their crypts might be washed out by means of a curved nozzle. In regard to Dr. Flynn's remarks he said that better results would be obtained when dental sepsis was sought in every patient and when the dentists came into line. He deprecated the use of gold crowns, because it was impossible to sterilize a tooth. When medication was applied to a pulp a certain number of organisms were killed, but it was impossible to kill them all and the remainder adapted themselves to their environment. Moreover, when a pulp cavity was filled, contraction occurred and 5% of the cavity was unfilled. Another dangerous material as far as the pulp was concerned was porcelain cement. It devitalized teeth. Some pulp cavities were curved and it was impossible to fill them, a cavity always remained at the distal end.

Dr. Hoets in reply to Dr. Glissan said that in monarticular conditions trauma undoubtedly played a large part. Many of these joints were associated with septic foci. It was easy to see that a focus could be present without arthritis, but it was difficult to prove the reverse. Dr. Glissan had referred to the question of the treatment of a focus of infection and to the treatment of the deformed joint. Dr. Hoets thought that the treatment of both should be concurrent, particularly in the early stages. He agreed with what Dr. Teece had said in regard to passive movement. It was not his experience that out-patients as a class were not amenable to dental treatment. He could not agree with Dr. Flynn that vaccines were useless. He thought that they sometimes did good, particularly if an exacerbation of the symptoms occurred when a focus of infection was attacked. In these circumstances vaccine produced their best results. In regard to Dr. Flynn's remarks about the gall bladder he had several times noted definite relationship between exacerbations of arthritis and attacks of gall bladder colic. If a condition progressed after the removal of a focus, it was obvious that only one of perhaps many foci had been found, the responsible focus remained to be discovered. In regard to Dr. Vance's remarks about resting a joint he thought that it was not always necessary to adopt the extensive splinting recommended by Dr. Vance. In reply to Dr. Gentile he said that treatment would depend on how far the condition had advanced in the extended joint. Splinting might do all that was necessary. Synovectomy on the other hand might possibly relieve the painful and flexed joint.

A MEETING OF THE SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Lister Hall, Hindmarsh Square, Adelaide, on September 30, 1926, DR. H. H. E. RUSSELL, the President, in the chair.

Diagnostic Use of "Lipiodol" in the Spinal Canal.

DR. H. C. NOTT showed skiagrams of the spine taken in a case of paraplegia in which Sicard's method of injecting "Lipiodol" as a diagnostic measure had been employed. Dr. J. Close had injected 1·75 cubic centimetres of "Lipiodol" into the *cisterna magna* and, being heavier than the spinal fluid, it had all collected at the base of the spinal canal opposite the first sacral vertebra.

The diagnosis in this case had rested between disseminated sclerosis of the cord and spinal cord compression and the examination had definitely excluded the latter and consequently any indication for surgical intervention.

Dr. Nott also gave a brief account of the technique employed and stated that, as far as he knew, this was the first instance in which this method had been used in South Australia.

A New Cysto-Lithrotrite.

DR. G. H. BURNELL showed the new model of cysto-lithrotrite invented by Canny Ryall. While perhaps not quite so strong as the ordinary lithrotrite this in his opinion was far outweighed by the greater facility with which a stone could be crushed and by the fact that there was no possibility of damaging the bladder wall during the operation.

While Dr. Burnell had so far used the instrument only on one patient, no difficulty had been encountered in its manipulation.

Medico-Legal Practice.

DR. A. A. LENDON read a paper entitled: "A Case of Strychnine Poisoning: The Bute Tragedy" (see page 757).

DR. A. F. LYNCH read a paper entitled: "Medico-Legal Experiences" (see page 760).

DR. H. S. NEWLAND complimented Dr. Lynch on his very interesting paper and heartily supported the suggestion that the Council approach the Government with a view to the appointment of a medico-legal expert. He had discussed the matter with members of the Branch and considered it very desirable. He was very interested to hear the medical story of what was known as the recent Bute poisoning case and considered the medical defence a big factor in the acquittal of the accused woman.

DR. A. A. LENDON said his references to the Bute poisoning case were drawn from the notes of the evidence, but the facts as outlined by Dr. Lynch who assisted the defence all through, put quite a different complexion on some aspects of the case.

DR. G. H. BURNELL referred to the case of air embolism mentioned by Dr. Lynch and asked whether it was established fact that in cases of sudden death during the use of a syringe for the purpose of procuring an abortion death was due to air embolism. He knew of experiments performed by Dr. Bull who had put a cannula in the jugular vein of a calf and had pumped air into the circulatory system in a deliberate attempt to cause death by air embolism, but without success. The amount of air so introduced was far in excess of that introduced during abortion procedures and it seemed likely that some factor other than the introduction of air, was responsible for death in such cases.

Dr. Lynch in reply stated that De Lee commented on the failure to produce air embolism in animals. He not only reported a case exactly similar to that of Dr. Lynch but detailed other cases in human beings. All these cases occurred in women and during interference with the course of pregnancy.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as Members of the New South Wales Branch of the British Medical Association:

Flynn, Leopold Rupert, M.B., Ch.M., 1924 (Univ. Sydney), Martin Road, Centennial Park.
Kincaid, Hilda Estelle, M.B., B.S., 1920 (Univ. Melbourne), 105, Parramatta Road, Haberfield.
Hatherell, Robert Radcliffe, L.S.A. (London), 1891, M.R.C.S. (England), 1894, Baradine.
Muller, Raymond Albert, M.B., Ch.M., 1925 (Univ. Sydney), 263, Elizabeth Street, Sydney.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Wishart, William Balfour, M.B., Ch.B., 1911 (New Zealand), Auburn, Victoria.

Deane, Maslem Mackenzie, M.B., B.S., 1926 (Univ. Melbourne), Alfred Hospital.

MacInnes, Allan Finlay, M.B., B.S., 1923 (Univ. Melbourne), Rushworth.

AT 11 a.m. on November 11, 1926, DR. H. DOUGLAS STEPHENS, the President of the Victorian Branch of the British Medical Association, performed the ceremony of placing a wreath of remembrance on the war memorial in the foyer of the Medical Society Hall. This tribute to the memory of its members who lost their lives in the Great War is paid annually by the members of the Victorian Branch and the relatives and friends of the gallant dead are invited.

Congress Notes.

AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

THE following programmes of the Sections of Pædiatrics and of Orthopædics of the second session of the Australasian Medical Congress (British Medical Association), Dunedin, 1927, have been received from the Executive Committee. The provisional programme of Section I. was published in our issue of September 25, page 432, that of of Section II. in the issue of October 4, page 464, that of Section III. in the issue of November 6, page 641, that of Section IV. in the issue of November 27, page 751, that of Section VI. in the issue of November 27, page 752, and that of Section VIII. in the issue of November 6, page 641. A general summary of the proceedings of the several sections appeared in the issue of October 23, 1926, page 570.

SECTION IX.—PÆDIATRICS.

President: Dr. A. Jefferis Turner.

Vice-Presidents: Dr. R. H. Crisp, Dr. J. Macdonald Gill, Sir F. Truby King, Dr. H. Douglas Stephens.

Honorary Secretary: Dr. E. H. Williams.

Friday, February 4, 1927.

Morning.—Combined meeting of Sections on Goitre.

Afternoon.—President's Address on "Infant Feeding," followed by Sir F. Truby King.

Saturday, February 5, 1927.

Morning.—Demonstrations in hospital.

Monday, February 7, 1927.

Morning.—Surgical Papers: "Rare Surgical Conditions, Including Hirschsprung's Disease," "Congenital Pseudo-Arthrosis of the Tibia," "Congenital Hydrocephalus," by Dr. H. Douglas Stephens and Dr. R. B. Wade.

Afternoon.—"Pulmonary Tuberculosis in Infants and Children," by Dr. G. Blackmore, followed by Dr. H. W. Palmer, Dr. C. C. Anderson.

Tuesday, February 8, 1927.

Morning.—Combined meeting with Sections III. and V.: "Prevention of Diseases in Infancy and Childhood," by Dr. A. Jefferis Turner, followed by Dr. Bruton Sweet.

Afternoon.—Visit to Karitane-Harris Infants' Hospital. (Probably a discussion on summer diarrhœa.)

Wednesday, February 9, 1927.

Morning.—Treatment of Meningitis by Lavage of the Ventricles," by Dr. M. J. Plomley.
(At 11.30 a.m.)—Meeting of all sections on Cancer.

Afternoon.—"Erythrœdema," by Dr. A. Jeffreys Wood, followed by Dr. Bruton Sweet.
"Ultra-Violet Light in the Treatment of Children," by Dr. Graham Robertson.
"Treatment of Pertussis," by Dr. J. Macdonald Gill.

SECTION XI.—ORTHOPÆDICS.

President: Dr. N. D. Royle.

Vice-Presidents: Dr. W. Kent Hughes, Dr. A. Juett, Dr. A. V. Meehan, Dr. H. S. Newland, Dr. D. S. Wylie.

Honorary Secretary: Dr. J. Renfrew White.

Friday, February 4, 1927.

Afternoon.—President's Address on "Muscle Tone."

Monday, February 7, 1927.

Afternoon.—"Subacute and Chronic Epiphysitis," by Dr. Owen Johnston.
"Treatment of Club Foot," by Dr. W. Kent Hughes.

Tuesday, February 8, 1927.

Afternoon.—Combined meeting with Section X.: "The Cripple in War and from Industry," opened by Dr. R. B. Wade.

Wednesday, February 9, 1927.

Morning.—Combined meeting with Sections I., II., and VIII.: "Spastic Paralysis," to be opened by Dr. N. D. Royle.

Afternoon.—The members will be free to attend the combined meeting of Sections II., IV. and XII. on the pathology of bone diseases.

Travelling Arrangements.

INFORMATION has been received to the effect that the steamship *Maheno* will leave Melbourne on January 26, 1926, and will call at Milford Sound *en route*. Should the weather be at all doubtful the steamer will not call at Milford Sound. In this event members travelling to Dunedin might arrive there before accommodation is available unless they disembarked at the Bluff and undertook a trip from Queenstown. The Union Steam Ship Company make no reduction in fares to travellers to Dunedin who leave the ship at Milford Sound. It is suggested that members of Congress might find it more convenient to undertake the Milford Sound trip from Dunedin, as the officials of the Tourist Bureau are prepared to make special arrangements. Forty persons can be accommodated on the track.

Obituary.

ANDREW HONMAN.

"VACATING the presidential chair of the Branch in your favour, Sir, I offer you my sincere congratulations on your assumption of the highest office in the Branch and I take the opportunity to assure the members that their new President is one who has the honour and interests of the profession closely at heart and who is ready to sacrifice as he has for some years past sacrificed his time and energy in the promotion of that honour and interest. You, Sir, have been closely associated with the life of general practitioners and lodge surgeons, with the

practice of operating surgeons, with the work of an intermediate hospital and you have served your King and your fellow Australians with distinction on the veldt of South Africa. In the work of the Council you have proved yourself unsparing in your attendance at meetings, especially on the Organization Committee; you have thought out and prepared numerous reports and you have been a determined fighter for your point of view."

These words were spoken on December 2, 1914, by Dr. A. L. Kenny before he called upon Andrew Honman to step into the President's chair. There was no trace of exaggeration in the words; they expressed the opinion of his colleagues.

Andrew Honman was born at St. Andrews, in Fifeshire, Scotland, in 1858. He attended school in the same town. His father died while he was still at school. At the age of fourteen he passed his preliminary examination and in due course he went to London. He became a student at Charing Cross Hospital and studied under Mitchell Bruce, James Cantlie, T. H. Green, A. J. Pollock and Francis Hird. He was regarded as an unusually competent student, industrious, conscientious and intellectual. James Cantlie referred to the great reputation he had gained as a student. He secured a silver medal in pathology and was successful in several other prize competitions. In the year 1879 he obtained the diploma of member of the Royal College of Surgeons of England and in the same year he passed the examination for the licentiate of the Society of Apothecaries. In those days relatively few students in London entered for the degrees of the London University, for this institution was not a real university, but was merely an examining body. Moreover, the students of the medical schools save those of University College and King College were not encouraged to present themselves for degrees. After having qualified Andrew Honman was advised to seek a warm climate on account of his health. It is said that he would have lived but a few years had he remained in England. He therefore travelled around the world for two years with a wealthy member of the Council of the Iron and Steel Institute, S. Gilchrist Thomas. He also served as surgeon on board ships of the British India Steam Navigation Company. In 1883 cholera broke out in Egypt and a mission of twelve medical practitioners was sent to combat the epidemic. Honman was among the twelve. He was placed in charge of Mehallet Kebir on the recommendation of Sir Joseph Fayrer. It is said of him that he was the most valuable of the medical officers and that he faced the dangers of his position with calm courage and determination to render efficient service. His report on the epidemic was the one selected for reproduction in the form of a blue book.

On his return from Egypt he went to Germany and studied for a year at the University of Bonn.

He then turned his face to the other side of the world. In 1884 he arrived in Victoria and settled at Williamstown. He soon gained a reputation among the people of the district as a very kindly, sympathetic practitioner, a most capable physician and surgeon, an untiring worker and a genial friend. His practice grew at a rapid pace and his popularity spread farther and farther afield. For twenty years he worked assiduously for his patients and tended the poor with as much consideration as he gave to the rich. He held the position of quarantine officer under the colonial government and of health officer. He initiated a movement for the establishment of a public hospital in his district and was largely responsible for the organization of the Williamstown Public Hospital. He was the first principal medical officer and at a later date he became consulting surgeon.

In 1889 at the age of thirty-one he joined the Victorian Military Forces. When the South African War broke out in 1900 he volunteered for active service and embarked with the second Victorian contingent with the rank of major. His was distinguished service and he received official recognition in the form of the Queen's medal with five clasps. He returned after the end of hostilities and immediately resigned his commission in the Militia. He then relinquished his practice in Williamstown and started practice in Melbourne, at first in Collins Street and later in Spring Street. At this stage of his career he was attracted to the wonderful work of the Salvation Army and became a staunch supporter of this movement. He planned the Bethesda Hospital. At first there were but two beds in a small room, but in the course of time the institution expanded and has now substantial proportions. He was attached to the hospital at its inception as active surgeon and later as consulting surgeon. In addition he served in an honorary capacity as medical officer to the Salvation Army in Victoria.

His work in Melbourne was almost entirely devoted to surgery. He realized that every surgeon tends to specialize to some extent and his choice was abdominal surgery. He acquired a considerable reputation as a safe and clever operator and a sound diagnostician.

Andrew Honman was fifty-six years of age when war was declared in Europe. Notwithstanding the disability of advancing years he offered his services. He received a commission in January, 1916, and on April 1, 1916, he was

appointed Officer Commanding the No. 5 Australian General Hospital in St. Kilda Road, Melbourne. His previous military experience combined with his keen sense of justice and regard for humanity rendered him an exceptionally valuable officer in this position. The soldier patients under his charge were indebted to him for very many privileges; they reaped the full advantage of his wide professional knowledge and of his keenness to serve them as they had served their King and country. He fought for their rights, but maintained strict discipline. He then held the rank of Lieutenant-Colonel. During this period his son was killed on active service in France. Major Andrew Victor Honman had distinguished himself as a Captain in the Australian Army Medical Corps, had been mentioned in the official despatches and had received his majority. The blow was a very severe one to the father. He was promoted in 1917 to the rank of Honorary Colonel. Toward the end of the year he was transferred to No. 16 Australian General Hospital which was situated in the buildings of the Hospital for the Insane at Mont Park. In April, 1918, he was commissioned in the Australian Imperial Force to visit the United States of America, Canada and the United Kingdom to study the methods employed of treating limbless soldiers and of conducting vocational training. He went to France in August, 1918, and thence he visited Italy. He collected much valuable information on his journey and was given unusual opportunities to acquire much knowledge of modern orthopædics. On his return to Australia at the end of February, 1919, he was placed in charge of No. 11 Australian General Hospital at Caulfield. Here he set to work to apply the best methods he had studied in other countries. He established curative workshops and introduced many important reforms. A little later he found that the years of continuous strain at home and abroad had left their impression on his strength. His health began to fail and he was compelled to resign his commission. He returned to his private practice in Spring Street. The winter's cold and the heavy calls of his professional work prevented him from recovering his previous energy and he recognized that he had grown old.

In March, 1921, Andrew Honman was appointed by the Prime Minister Principal Medical Officer of the mandated Territories of New Guinea. The appointment at first was in the Australian Naval and Military Forces, but in November, 1921, the military occupation terminated and the medical service was transferred to the civil administration. He found a great deal of organizing work to do and he was required to attack it with a smaller staff than that of the military authority. Moreover the conditions of service were less favourable. Andrew Honman met his difficulties with resource and carried out his duties in a most admirable manner. He undertook many tours of inspection himself and visited the most inaccessible parts of the Territory. At times he tramped through jungle and roughed it like a young patrol officer. He was faced with special duties during an outbreak of variola. A man with less energy and smaller experience might have failed to meet the situation with adequate action, but Honman was equal to the task and acquitted himself splendidly. He did not fear the dangers of fever-stricken districts and answered the call wherever and whenever it came. He took a prominent part in the hookworm survey work of the International Health Board and the Federal Government. This work had been begun by Dr. Waite in 1918 in Papua and at the time of Andrew Honman's activity in New Guinea was being carried out by Dr. S. M. Lambert. His report of the medical service of New Guinea to the League of Nations was favourably commented on and makes very interesting reading. Some of the accompanying photographs are particularly arresting. During the whole of this time he was suffering from subtertian malaria. His health, previous undermined by the shock of his son's death, by the hard work and heavy load of his military appointments and by his increasing years, again began to fail. On reaching his sixty-fifth birthday he was required by the service regulations to resign his appointment.

He returned to Victoria and lived quietly in his home at Montmorency. He did some work both from his home and in Collins Street, but he was unable to do much, owing to repeated attacks of malaria.

Reference has been made above to the fact that he was President of the Victorian Branch of the British Medical Association in 1915. In 1911 he had held the office of Honorary Assistant Treasurer of the Medical Society of Victoria after having been a member of the committee of that body for sixteen years. He was always actively interested in the affairs of his profession and indeed he was a ceaseless worker. He took few holidays and did not often indulge in recreation. He was one of the kindest and most generous men in his profession. He was always ready to assist others with advice, encouragement and even more tangible aid. He was an insatiable reader and spent long hours at home reading medical and other works, always for his mental benefit. He was an animal lover and gathered together a strange collection of pets. Wherever he went he earned respect and admiration—often deep affection. The medical profession offers sympathy to his widow and to his son and two daughters.

Correspondence.

"RADIOGRAPHS OF BONES."

SIR: There is a slight inaccuracy in your review of "A Descriptive Atlas of Radiographs of the Bones and Joints."[1] It is the print and not the plate which is blocked in with India ink. Perhaps your readers may be interested in the process used in obtaining the silhouette radiograph.

The negative having been placed in an illuminator, the skin outline is scratched with a mounted needle. The print then taken, reveals the skin as a black line. After drying, the background is blocked in with India ink and the print allowed to dry, after which it is "squeegeed" as usual. The result is a silhouette superimposed on a radiograph which is invaluable to all those who cannot afford to dispense with clinical signs when interpreting radiographs.

The process enables one to dispense with a photograph on many occasions. An encephalocele for example shows even better than it would on a photograph. It shows the cause of any deformity of contour if such be bony.

A useful feature is the manner in which the position of the limb is indicated at the time of the screening. Radiologists are reluctant to part with negatives owing to fear of loss or breakage. If the fleshy contour is scratched on the negatives before printing, the picture would have an added value. The addition of the background is a great advantage for reproductions, the bones showing up with startling clearness.

Finally it may be said that the silhouette radiograph bridges a gap between clinician and radiologist.

Yours, etc.,

A. P. BEETWISTLE, F.R.C.S. (Ed.).

London,
January 3, 1926.

INJURIES TO THE BACK.

SIR: Pray accept my apologies for encroaching again on your space. A correspondent in today's issue speaks of "overstretching" lumbar muscles. This phrase increases my bewilderment. I am no anatomist, but reference to authority shows such a theory to be untenable. The muscles used in lifting or in reassuming the erect position do so by contracting and unless a further element other than mere use of the muscle should intervene, nothing pulls on them. For example, two men are lifting, one lets go and the whole weight suddenly and unexpectedly acts upon the other man. Or whilst lifting, a man's ankle twists and again interrupts his previously arranged neuromuscular coordination. They are not instances of injury from accustomed use. To believe that a contractile muscle is "overstretched" is to believe that its usage is far from accustomed. I suppose no one believes a man can overstretch his lumbar muscles by lifting a postage stamp. Finally, can a man suddenly injure his back by the performance of a usual activity. If so, what is the pathology of the injury and how can this injury be recognized objectively and distinguished from a non-traumatic lumbago? That is important; on it will depend the question of the man's maintenance whilst incapacitated.

Yours, etc.,

GERALD S. SAMUELSON.

Lane Cove,
October 16, 1926.

THE MANIC-DEPRESSIVE PSYCHOSES.

SIR: In the October 23 issue of the journal Dr. Ellery in a paper entitled "The Manic-Depressive Psychosis" makes some references to my contribution in the July 17 issue, "A Criticism of the Term Manic-Depressive Insanity," which call for some reply from me.

First let me assure Dr. Ellery that contrary to his suggestion that "Dr. Lind has merely set up cockshies for an intellectual exercise" I have too much respect for my fellow-workers to put before them anything that is not *bona fide*. Years ago we worked with the classification of mania, melancholia and alternating insanity, as described by that grand old man Clouston, a better student and exponent of psychiatry than the Continent ever produced. Later on the term manic-depressive insanity was introduced. The first drawback to the new terminology was that instead of writing "mania" or "melancholia" as a diagnosis we had to write "exalted" or "depressed phase of manic-depressive insanity." Dr. Ellery says: "Obviously there exists some confusion of terms." One of the reasons which actuated me in writing the paper was to point out this confusion in the definitions of manic-depressive insanity as given differently by Craig, Kraepelin and Stoddart. From the second paragraph of Dr. Ellery's paper it appears to me that he does not appreciate the fact that physiological depression and exaltation may be present in the sane without being pathological melancholia and mania—pathological melancholia and mania being mental depression and exaltation out of proportion to the assigned cause. I notice that in disparaging my synopsis Dr. Ellery says: "Statistics are very misleading." I presume that remark applies equally to his own synopsis. Dr. Ellery's reading of my paper must have been very superficial, for him to have mistaken the index of my case groups for the actual groups which were clearly set forth just below. That mistake rather spoilt his attack upon "Dr. Lind's first set of figures."

My opinions may not meet with the approval of many workers in psychiatry, but they should be subjected to fair criticism which is obtainable only when the critic has read my paper carefully, which obviously was not done on this occasion.

Yours, etc.,

W. A. T. LIND.

Kew, Victoria,
October 27, 1926.

LARVAL TREMATODES IN NEW SOUTH WALES.

SIR: It was with great interest that I read Dr. Burton Bradley's article on the systematic determination of certain larval trematodes found in fresh water mollusca in New South Wales, but my interest was tinged with regret that he should appear to endeavour to discredit the results obtained by another worker in the same field. Referring to McKay's remarks in regard to the distribution of fluke in New South Wales, he states: "In this connexion I must refer to a most astounding statement made by McKay in writing of fluke distribution in the Cooma district. He states: 'There is practically very little or no fluke in this district according to pastoralists.'" Dr. Bradley further makes other irrelevant remarks about McKay's credulity if he credits pastoralists with telling the truth. The more careful perusal of McKay's paper referred to should have shown him that the remark above quoted applied not to the Monaro as a whole, but to the Junee district, where as is well known fluke infestation is of relatively slight importance. Such statements by Dr. Bradley would lay him open to the accusation of deliberate misrepresentation by those not knowing him well enough to realize how unjustified such an accusation would be. Further in regard to Dr. Bradley's estimate of the value of McKay's work and his fear that it was of such a character to make Australian research the laughing stock of the scientific world, it would be gratifying to him to learn that evidence is not lacking of McKay's work being accepted readily by reputable helminthologists in other parts of the world as affording proof of the essential facts in regard to the life cycle of *Fasciola hepatica* in this State. Had McKay been given to the uncharitable practice of looking for motes in his brother worker's eyes oblivious of possible beams in his own, he might have drawn attention to inaccuracies in nomenclature in Dr. Bradley's earlier article, as well as his definite exclusion of *Bullinus brazieri*

[1] We regret that the publication of this letter has been delayed for a long time owing to an unfortunate oversight.—[ED.]

as an intermediate of the fluke on what might be considered insufficient experimental data. To McKay's credit he refrained from the obvious temptation to detect flaws in what is otherwise excellent work.

Yours, etc.,

I. CLUNIES ROSS.

The Veterinary School,
The University of Sydney,
November 2, 1926.

Books Received.

OUR DOCTORS, by Maurice Ruplay; Translation and Preface by Joseph Collins; 1926. New York and London: Harper and Brothers; Sydney: Dymock's Book Arcade, Limited. Crown 8vo., pp. 279. Price: 5s. 6d. net.

CONSTITUTIONAL MEDICINE WITH ESPECIAL REFERENCE TO THE THREE CONSTITUTIONS OF DR. VON GRAUVOGL, by John H. Clarke, M.D.; 1926. London: The Homœopathic Publishing Company. F'cap 8vo., pp. 182. Price: 5s. 3d. net.

Medical Appointments.

Dr. Frederick John Bridges (B.M.A.) has been appointed to act temporarily as a Member of the Board of Official Visitors to the Mental Hospitals at Parramatta, Rydalmere and Cook's River, New South Wales.

* * * *

Dr. Paul Ernest Voss (B.M.A.) has been appointed Acting Government Medical Officer and Health Officer at Rockhampton, Queensland.

* * * *

Professor Henry George Chapman (B.M.A.) has been appointed a Member of the State Committee for New South Wales of the Council for Scientific and Industrial Research.

* * * *

Dr. Arthur W. Fox (B.M.A.), of) Charleville, has been appointed District Representative of the Queensland Branch of the British Medical Association for the Western Queensland area.

* * * *

Dr. R. K. Lee-Brown (B.M.A.) has been appointed Honorary Assistant Urologist to the Royal Alexandra Hospital for Children, Sydney.

* * * *

Dr. Raymond Victor Rickard (B.M.A.) has been appointed Government Medical Officer at Nabiac, New South Wales.

* * * *

Dr. Robert Mitchell Mackay (B.M.A.) has been appointed Chief Medical Referee of the Workers' Compensation Commission, New South Wales.

* * * *

Dr. William Ellis George (B.M.A.) has been appointed Medical Officer-in-Charge of the Bureau of Medical Inspection, Broken Hill, New South Wales.

* * * *

Dr. Thomas Gordon Ross (B.M.A.) has been appointed Official Visitor to the Reception House, Townsville, Queensland.

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Dr. Cedric Duncombe (B.M.A.) has been appointed to act temporarily at Broken Hill, New South Wales, as Chairman of the Medical Board, constituted in terms of the *Workmen's Compensation Act*, 1922.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xxii.

COMMONWEALTH DEPARTMENT OF HEALTH, PORT ADELAIDE: Medical Officer.

COMMONWEALTH DEPARTMENT OF HEALTH, MELBOURNE: Medical Officer.

PEAK DOWNS HOSPITAL, CLERMONT, QUEENSLAND: Resident Surgeon.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudinna (Central Eyre's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia. Yarloop Hospital Fund.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

DEC. 7.—Tasmanian Branch, B.M.A.: Council.
DEC. 7.—New South Wales Branch, B.M.A.: Ethics Committee.
DEC. 8.—South Sydney Medical Association, New South Wales.
DEC. 9.—New South Wales Branch, B.M.A.: Branch.
DEC. 9.—Victorian Branch, B.M.A.: Council, Election of Office bearers, 1927.
DEC. 10.—Queensland Branch, B.M.A.: Branch (Annual).
DEC. 13.—New South Wales Branch, B.M.A.: Organization and Science Committee.
DEC. 14.—Tasmanian Branch, B.M.A.: Branch.
DEC. 14.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
DEC. 15.—Central Northern Medical Association, New South Wales.
DEC. 15.—Section of Obstetrics and Gynæcology, New South Wales Branch.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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